Energy Efficiency and Conservation in the Public, Residential, Commercial and Industrial Sectors

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Background – KEC

The executive order establishing the Kansas Energy Council (KEC) states, "policies to encourage renewable energy and energy efficiency, and to extend the life of existing resources are required for Kansas to regain its status as an energy exporter and for Kansas' energy future;" and "the Council shall formulate and coordinate a comprehensive state energy plan that includes strategies to increase energy efficiency and conservation."

The Council is also directed to recommend, "Appropriate means to increase the state's self-reliance on its own energy sources through increased efficiency in the use of its resources, and policies to encourage energy efficiency."

The KEC's actions in regards to these tasks are identified by the reference documents in the appendix and in the recommendations and action steps listed in each annual report. This background study and draft plan attempts to build on these past efforts to the extent possible.

The current context for Kansas in the near term should also consider the Federal Energy Policy Act of 2005 and its measures for manufacturer and consumer tax incentives for advanced energy saving technologies and practices. With minimum energy standards on 16 products and incentives for new homes, commercial buildings, appliances, HVAC equipment and existing home retrofits, there is an efficiency promotion opportunity for program initiatives that might be developed as an outcome of this effort. Current information on these incentives is available at the Tax Incentives Assistance Project web site at www.energytaxincentives.org

Background – Efficiency Potential

What is the potential for energy efficiency and conservation to meet energy needs and end uses in these sectors and at what costs for what benefits and how much energy saved? Numerous regional, state and utility level potential studies have been conducted to assess this, as have evaluations of actual cost/benefit/energy savings and performance at these levels. In addition, specific efficiency/conservation measures/programs assessments have been conducted to identify best practices and where returns on investment are maximized. Kansas can build on the efforts of others and lessons learned to craft appropriate policies and programs.

Energy efficiency measures applied can reduce demand and consumption in meeting sector end uses of energy. In this way it can be viewed as a "resource" that can be tapped,

potentially reducing the use of other resources that would be consumed to meet that energy need. Extending the availability of resources and delaying or eliminating the need for harvesting resources and generating facilities can be important benefits in evaluation of what measures to implement. What potential exists can be described in a range from what naturally occurs in the market place to what is theoretically available through technology applied without regard to cost. In between is what potential exists with market intervention up to some level of economic critieria, such as avoided cost or other indicators. The life span of the measures, or projected impact over time are important items to consider in this potential assessment.

In addition to this fundamental potential effect are a range of other identified benefits, including:

- Reduces load, peak demand, & energy use
- Reduces market prices for all consumers
- Often less costly and more cost-effective
- Distributed (no need for transmission and distribution)
- Diverse
- Less subject to market and fuel price volatility
- Less subject to security risks and interruptions
- Promotes environmental enhancement
- Provides benefits to consumers and businesses
- Creates jobs and improves the economy

One reason that efficiency investment boosts the regional economy is that it stimulates local enterprises and local investment more effectively than do many energy supply resource investments. Incremental increases in energy usage typically export most of the net increase in revenue outside the region, as national and global corporations typically dominate these industries. By contrast, increased sales of efficiency technologies create new revenues and new jobs in a range of regional economic sectors, including construction, retail, and services. The increased economic activity in these in-region sectors typically outweighs small decreases in energy revenues. Moreover, energy bill reductions free up personal income and business profit that are subsequently re-spent within the region, which compounds the in-region economic benefits from efficiency investments.

While the market will see some adoption of energy efficiency measures as a function of naturally occurring decisions, achievement of greater potential involves interventions and a need to address barriers, including:

- Lack of customer information about efficiency technologies and costs;
- Limited product availability
- Transaction costs for delivering and installing many small efficiency improvements;
- First-cost problems and the customer's limited access to capital;
- Builder/buyer, landlord/tenant, and other split-incentive problems;
- Environmental costs not included in the cost of power; and
- Masking of real-time costs through customer aggregation, average billing, and

regulated rate plans.

Energy efficiency proponents point to a wide range of market failures or barriers that inhibit greater investment in energy efficiency measures, including:

- Limited supply and availability of some energy efficiency measures such as newer measures manufactured on a limited scale or not yet widely marketed;
- Consumers lacking or having incomplete information about energy efficiency options;
- Consumers and businesses lacking the capital to invest in energy efficiency measures;
- Lack of staffing and time within businesses and industries;
- Fiscal or regulatory policies that discourage energy efficiency investments;
- Decision making that does not consider or value energy efficiency;
- Perceived risk associated with the performance of relatively new energy efficiency measures;
- Split incentives whereby the party designing, constructing or purchasing a building or piece of equipment does not pay the operating costs; and
- Energy prices that do not reflect the full costs imposed on society by energy production and consumption (so-called externalities).10

How are these benefits secured and barriers addressed in other regions, states and programs and what are the lessons learned? The following studies are relevant for review in formulating policy initiatives for Kansas:

What are the lessons learned from review of these documents?

- There is significant cost-effective potential for energy efficiency to help meet electricity and natural gas demand;
- Significant savings are being achieved through well-designed programs and policies;
- Energy efficiency can be cost-competitive with new supply to meet growing electricity demand, often delivering savings at a cost of 2 to 4 cents per kilowatt-hour;
- Energy efficiency can be targeted to reduce peak demand, leading to significant cost savings and natural gas savings at a time when supply is constrained; and
- Energy efficiency can reduce electricity demand in transmission-constrained areas, deferring investments for transmission upgrades.
- Comprehensive approaches achieve savings in all end use sectors
- Custom service for large industries and customer focus in other sectors
- Program marketing and support services are essential
- Single end use technology targets can work if promoted well
- Promote other benefits – comfort, value, convenience, productivity, reliability, reduced costs

The experience of these states and information gleaned from program evaluation has resulted in the establishment of state targets for energy efficiency as a resource and significant increases in funding for these efforts. Here is a sample of state goals and targets:

California: California Public Utility Commission sets new energy efficiency savings targets that will double savings over the next decade—to ~5000 MW peak demand and ~23,000 GWh by 2013 with budgets for programs increased accordingly to unprecedented levels.

Illinois: Implementing an "Energy Efficiency Portfolio Standard"—will require utilities to meet 10% of annual load growth by 2008; 25% by 2017

Texas: Regulated distribution utilities must meet 10% of new demand growth through energy efficiency

Iowa: 10% reduction in overall end-use

New Jersey: Board of Public Utilities set energy efficiency goals of 1,813,750 MWh for electricity savings and 2,596,706 Dtherms for natural gas savings for 2005 through 2008. Funded by $472 million from New Jersey's Societal Benefit Charge, to be made initially available to programs managed by the utilities.

Wisconsin: Public Service Commission of Wisconsin ordered We Energies to acquire 55 MW energy efficiency in conjunction with new base load plant construction

California has been a leader in energy efficiency and conservation programs and has contributed to the knowledge base of best practices and program evaluation protocols through funding investments. Their Action Plan lists the following energy efficiency goals:

- Optimize Energy Conservation and Resource Efficiency
- Implement voluntary dynamic pricing to reduce peak demand
- Improve new and remodeled building efficiency by 5%
- Improve A/C efficiency by 10% above federal mandate
- Make every new state building a model of energy efficiency
- Create customer incentives for aggressive demand reduction
- Provide utilities with demand response and energy efficiency investment rewards comparable to return on investment in new power and transmission projects
- Increase local government conservation and efficiency programs
- Incorporate, as appropriate per Public Resources code section 25402, distributed generation or renewable technologies into energy efficiency standards for new building construction.
- Encourage companies that invest in energy conservation and resource efficiency to register with the state's Climate Change Registry.

Perhaps a best reference for Kansas is the work of the Western Governors Association

Clean and Diversified Energy Advisory Committee and its Energy Efficiency Task Force Report. Representing eighteen western region states (including Kansas) this effort over the last year reviewed seven major energy efficiency potential studies, best practice policies and programs, and analyzed electric energy efficiency potential savings under three different scenarios. The following excerpt from the report captures the essence of the project and its findings on a regional scale.

"Achieving the 20% Energy Efficiency Goal by 2020

A "Win-Win" for consumers and businesses

Energy efficiency and conservation are our cheapest, cleanest, least risky and least controversial energy resources. Increasing the efficiency of energy use in Western states, without reducing productivity, will provide a broad range of benefits, including: saving consumers and businesses money on their energy bills; reducing vulnerability to energy price spikes; reducing peak demand and improving the utilization of the electricity system; reducing the risk of power shortages; supporting local businesses and stimulating economic development; reducing water consumption by power plants; and reducing pollutant emissions by power plants and improving public health.

Successful policies to promote energy efficiency and conservation include a mix of incentives, information, targets, and standards. All Western states are engaged to various degrees in implementing energy efficiency and conservation measures, but significant untapped potential remains. An independent analysis of the "best practices" policies and programs in the West indicated that it is feasible to cost-effectively reduce electricity use 20% from projected levels in 2020, without sacrificing economic growth. The studies show that aggressive deployment of the best practice policies and programs throughout the West, each of which have been successfully implemented in at least one western state and all of which rely on existing technologies, growth in electricity demand can be reduced by 0.5-2% per year.

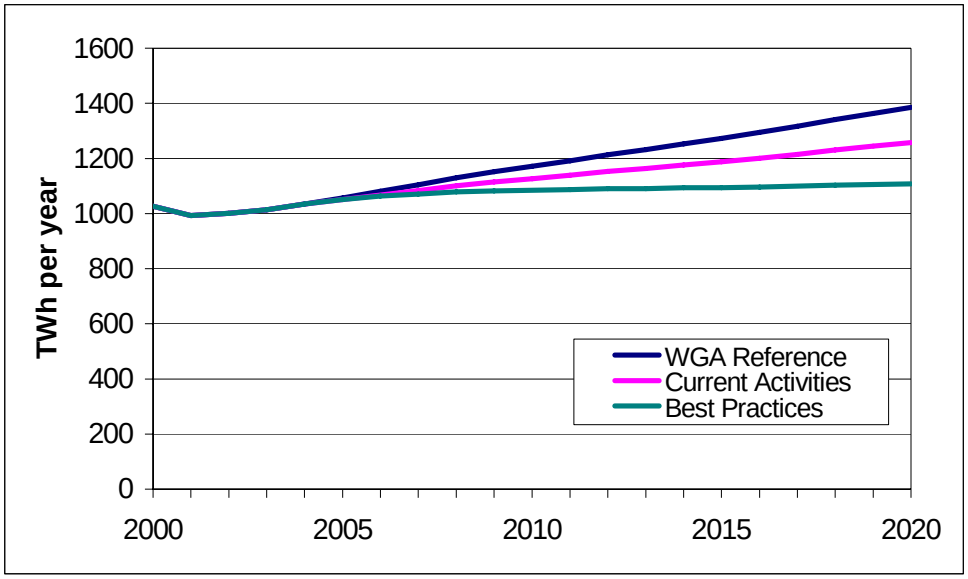
There are several model energy efficiency programs throughout the West. Exemplary best practice programs include: electricity and natural gas energy efficiency programs where energy efficiency is considered a resource and all cost-effective savings are pursued with investments of at least 2% of revenues (saving energy at 2-3 cents/kWh saved); state-of-the-art building codes, training, enforcement and "beyond code" incentive programs; efficient state and federal appliance standards; RD&D and technology transfer; public sector initiatives including aggressive energy efficiency and conservation goals for public buildings, procurement standards, low interest loans and performance contracting; tax credits and other financial incentives; pricing and incentive regulation policies; and regional cooperation and market transformation.

Energy Efficiency Potential

In order to assess potential electricity savings and the impacts of more aggressive energy efficiency and conservation efforts in Western states, the Energy Efficiency Task Force conducted an independent energy savings analysis, developing and analyzing the following three scenarios for electricity demand in the 18-state region through 2020:

- Reference scenario: a slightly modified version of the most recent Reference Case forecast prepared by the Energy Information Administration, applied to WGA states.
- Current Activities scenario: adjusting the Reference scenario to account for the estimated impacts of ongoing and recently enacted policies and programs at the state, regional, or utility levels.
- Best Practices scenario: assuming adoption of "best practice" policies and programs in all 18 states.

Electricity Consumption in WGA states by Scenario



As shown in the Figure above, load growth during 2003-2020 averages 1.9% per year in the Reference scenario, 1.3% per year in the Current Activities scenario, and 0.5% per year in the Best Practices scenario. As noted above, electricity consumption increased 1.7% per year on average during 1990-2003 in the 18 WGA states. Given what this chart shows, the need for new power plant construction would not be eliminated over the next 15 years, but could be reduced by as much as 75%.

The Best Practices scenario shows that it is possible to reduce electricity consumption in 2020 by 20% relative to that in the Reference scenario, or the equivalent of electricity supplied by 100 baseload power plants. The CDEAC believes it is possible to achieve the energy efficiency goal enunciated in the Clean

and Diversified Energy Resolution, namely realizing 20% electricity savings by 2020, assuming that a variety of appropriate and cost effective incentive-based and other approaches are deployed. Moreover, even greater electricity savings may be possible through adoption of other strategies not included in the Best Practices scenario, such as R&D, technology transfer, or pricing initiatives.

Benefits of the Best Practices Scenario

- **20% electricity savings by 2020, relative to the Reference Scenario**
- **48,000 MW of avoided power plant construction during 2005-2020**
- **Small reduction in electricity prices in the latter part of study period**
- **$53 billion in net economic benefits for consumers and businesses**
- **Substantial avoidance of power plant emissions**
- **Approximately 1.8 trillion gallons of water savings during 2005-2020**

Implementing the Best Practice energy efficiency and conservation policies and programs would provide substantial economic benefits for households and businesses in western states. By 2020, these efforts could lower electricity bills in aggregate by $21 billion per year. Based on the analyses done by the Energy Efficiency Task Force, the Best Practices scenario would yield $53 billion in net economic benefits during 2005-2020 on a net present value basis, with an overall benefit-cost ratio of 2.5. The benefits result mainly from avoided fuel purchases by utilities, and avoided investment in generation, transmission, and distribution infrastructure. Furthermore, the benefits could be even greater as the cost of natural gas increases.

Implementing the Best Practice energy efficiency and conservation policies and programs would also provide air pollutant emissions reductions. Carbon dioxide (CO2) projected emissions would decline the most (17% by 2020). In addition, NOx emissions by power plants would decline a moderate amount (7% by 2020) in the Best Practices scenario, relative to the Reference Scenario.

Energy efficiency and conservation best practices would result in water savings from both increased use of energy and water saving devices in homes and businesses, and less operation of steam-based power plants. The Best Practices scenario would save 260 billion gallons of water per year by 2020 relative to the Reference scenario, equivalent to the annual water use of about 1.4 million households. Total water savings during 2005-2020 in this scenario would be approximately 1.8 trillion gallons.

The CDEAC believes increasing energy efficiency and conservation should be an important component of the clean energy strategies developed and implemented in the West. It will be important for governors, legislatures, state regulatory commissions, and private sectors to work in concert to enact new incentive-based and other policies aimed at increasing the efficiency of electricity and conservation of natural gas use. While there is no “silver bullet” for overcoming the barriers that

are inhibiting widespread energy efficiency and conservation improvements, there are a variety of proven policies and programs that are available to states.

Adopting "best practice" energy efficiency policies and programs in all western states could eliminate most of projected load growth during 2005-2020, reduce overall electricity consumption in 2020 by 20% relative to a scenario without energy efficiency initiatives, and yield tremendous economic and environmental benefits.

In order to realize these broad benefits, we recommend that Western Governors work with their legislatures, state regulatory commissions, and private sectors to enact new policies aimed at increasing the efficiency of both electricity and natural gas use. There is no "silver bullet" for overcoming the barriers that are inhibiting widespread energy efficiency improvements. But there are a variety of proven policies and programs that are available for states to take advantage of. With energy costs high and rising, the time to act is now. "

Policy Recommendations - WGA Energy Efficiency Task Force Report Jan 06

Electric Utility Demand-Side Management (DSM) Programs

• Encourage or require that utilities integrate energy efficiency options into resource planning and procurement decisions and pursue energy efficiency whenever it is the least cost resource option. At a minimum, electricity distribution companies in western states should dedicate at least 2% of revenues for ratepayer-funded energy efficiency programs, as long as doing so is cost effective.
• Establish minimum energy savings requirements or targets. In particular, we recommend setting a goal of saving 3-5% of projected electricity sales in 2010 through DSM programs. By 2020, we recommend setting a goal of 10-15% savings from DSM programs, as long as doing so is cost effective.
• Decouple electricity sales and revenues so that reduced electricity sales do not adversely affect utility revenues, in combination with the creation of performance incentives that reward utilities for implementing effective DSM programs.

Gas Utility Demand-Side Management (DSM) Programs

• Encourage or require gas utilities to integrate energy efficiency resources into their resource planning and procurement decisions and pursue energy efficiency whenever it is the lowest cost option.
• Establish ratepayer-funded natural gas energy efficiency programs.
• Invest at least 1.5-2% of gas utility revenues in energy efficiency programs and strive to save the equivalent of 0.5-1.0% of gas consumption per year, as long as doing so is cost effective.
• Decouple gas utility sales and revenues and create performance incentives that reward utilities for implementing effective DSM programs.

Building Energy Codes

• For states with outdated (pre-2003) energy codes, adopt the 2004 International Energy Conservation Code. Also, consider adopting innovative features of

California's latest Title 24 building energy codes, such as lighting efficiency requirements in new homes.

• Update building energy codes regularly. A three-year cycle could be timed to coincide with release of the national model codes.

• In home rule states, either establish a statewide mandatory code or strongly encourage local jurisdictions to adopt and maintain state-of-the-art codes.

• Implement training and technical assistance for builders, designers, and code officials.

Appliance Efficiency Standards

• California should continue to adopt minimum efficiency standards on products not covered by the federal standards.

• Other western states should replicate efficiency standards first adopted by California, where cost effective.

Public Sector Initiatives

• Establish substantial energy savings goals or requirements for state and municipal agencies, and track progress towards meeting them. We suggest at least a 2% annual reduction in energy use per square foot of floor area.

• Provide financial and technical assistance for implementation of energy savings projects in existing buildings and facilities.

• Use energy service companies (ESCOs) and performance contracting to implement efficiency projects without public sector capital investment.

• Construct new buildings that are exemplary and surpass minimum energy code requirements by a wide margin.

• Purchase only ENERGY STAR-labeled equipment in categories where such products are designated.

Financial Incentives

• Consider providing income or property tax incentives to help stimulate greater adoption of energy efficiency measures, and consider coordinating qualification levels with the newly adopted federal energy efficiency tax credits.

• For states with growing severance tax revenues on fossil fuels production, consider using a portion of these revenues to offset the revenue loss from tax incentives on energy efficiency measures.

Pricing Policies

• Adopt inverted block rates (also known as tiered rates) for electricity consumed by residential customers.

• Consider adopting inverted block rates for natural gas.

Education and Training

• Partner with the U.S. EPA and DOE in promoting ENERGY STAR products, homes, commercial buildings, and industries.

• Implement programs to train builders and contractors on proper heating and air conditioning sizing and installation.

• Train commercial building energy managers, for example by making use of the building operator training and certification program developed in the Pacific Northwest.
• Train industrial energy and facility managers in techniques for improving the efficiency of their steam, process heat, pumping, compressed air, motors, and other systems, partnering with the U.S. DOE in doing so.
• Educate consumers about innovative energy efficiency measures such as modern evaporative cooling systems, reflective roofing materials, sealing thermal distribution systems, and use of day lighting.
• Undertake K-12 school- and college-based energy education programs.

Technology R&D and Transfer

• Support energy efficiency R&D and technology transfer efforts through either intrastate programs or working collaboratively among states.
• Initiate, continue, and where appropriate expand programs promoting best practices in industrial energy management.
• Encourage companies to set goals for energy efficiency improvement and energy savings, and track their progress towards the goals.

Regional-Level Initiatives

• Create additional regional market transformation organizations modeled on the successful Northwest Energy Efficiency Alliance.
• Form a regional building energy code collaborative to support code development, adoption, and implementation.
• Advocate, as a region, for stronger federal appliance efficiency standards where this is technically feasible and economically justified.
• Create or utilize a regional working group to quantify the air emissions benefits of energy efficiency programs and foster inclusion of energy efficiency initiatives in state and regional air quality improvement plans.
• Ensure that the potential for and effects of energy efficiency efforts are incorporated in regional transmission planning.
• Encourage Native American tribes to work together in hiring and training energy managers and contractors.
• Reduce barriers to performance contracting and implement other strategies for increasing energy efficiency in commercial buildings.

Background - Natural Gas Efficiency and Conservation Programs

In an effort to characterize the potential for natural gas energy efficiency programs in Kansas, several resources provide guidance in addition to the policy options suggested by the WGCDEAC task force. The American Council for an Energy Efficient Economy's studies:

Responding to the Natural Gas Crisis: America's Best Natural Gas Energy Efficiency Programs
and

serve as appropriate background material to frame Kansas options. The following pages are excerpts from the reports to capture the key points for background for KEC policy consideration.

> "The intent of this report is to provide regulators, policy makers, and program administrators with a guidebook of practical, state-of-the-art information about energy efficiency programs that can be used effectively to yield critical natural gas savings in an expedited time frame. ACEEE conducted a nationwide search and review of utility sector natural gas energy efficiency programs and associated regulatory and policy mechanisms. This research project had two primary objectives:
>
> 1. Provide a catalog and detailed description of the best programs available for saving natural gas through energy efficiency improvements.
> 2. Provide a review and summary of specific policy and regulatory mechanisms currently being used by state policymakers and regulators to encourage and support efforts by natural gas utilities to provide energy efficiency services to their customers."

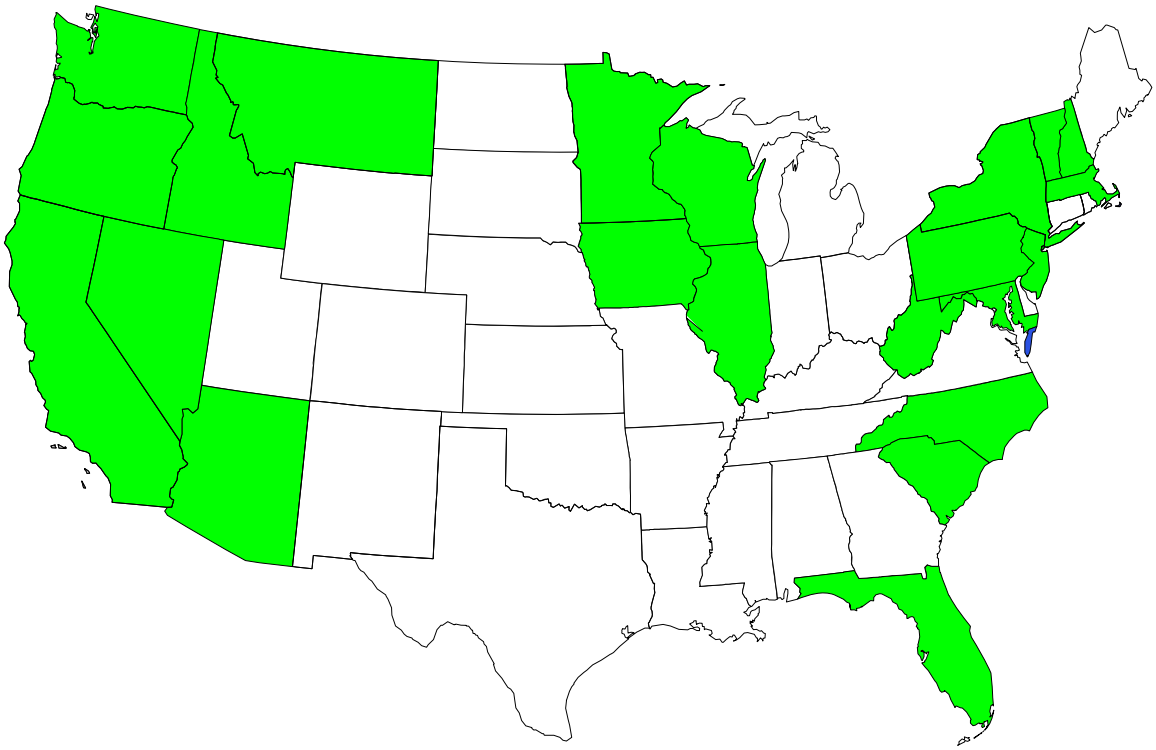


Figure 1: States with Natural Gas Utility-Funded Energy Efficiency Programs

Table 1: Natural Gas Screening Survey

State	Does State Have NG EE Programs?	Who Administers	Is Commission Discussing Starting Programs?
Alabama	No		No
Alaska	No		
Arizona	Yes	Utilities/Energy Office	
Arkansas	No		No
California	Yes	Utilities/3rd parties	
Colorado	No		No
Connecticut	No		No
Delaware	No		No
District of Columbia	No	7	No
Florida	Yes	Utilities	
Georgia	No		No
Hawaii[1]	N/A		
Idaho	Yes	Utilities	
Illinois	Yes	State	
Indiana[2]	No		
Iowa	Yes	Utilities	
Kansas	No		No
Kentucky	No		No
Louisiana	No		
Maine	No		Yes
Maryland	Yes	Utilities	
Massachusetts	Yes	Utilities, contractors	
Michigan	No		No
Minnesota	Yes	Utilities	
Mississippi	No		No
Missouri	No		Yes
Montana	Yes	Utilities	
Nebraska	No		No
Nevada	Yes	Utilities	
New Hampshire	Yes	Utilities	
New Jersey	Yes	Utilities	
New Mexico	No		No
New York[3]	Yes	State (NYSERDA)	
North Carolina	Yes		
North Dakota	No		No
Ohio	No		No
Oklahoma	No		No
Oregon	Yes	Utilities and also the Energy Trust of Oregon	
Pennsylvania	Yes	Utilities/nonprofits	
Rhode Island	No		No
South Carolina	Yes	Utilities	
South Dakota	No		No
Tennessee	No		No

State	Does State Have NG EE Programs?	Who Administers	Is Commission Discussing Starting Programs?
Texas	No		No
Utah	No		Yes
Vermont	Yes	Utilities	
Virginia	No		Yes
Washington	Yes	Utilities	
West Virginia	Yes	Utilities	
Wisconsin	Yes	State	
Wyoming	No		No
N/A	1		
No	28		21
Yes	22		4
Total	51		25

"Past research has abundantly demonstrated that some type of legislative and/or regulatory requirement and funding mechanism is an essential ingredient for any significant utility energy efficiency program effort to occur (e.g., see Cowart 2001; Kushler & Suozzo 1999; and Kushler & Witte 2001)."

"Table 2 presents summary data for eight states and one Canadian province regarding their legislative and regulatory framework for utility natural gas programs. These nine jurisdictions were chosen because they were the leading areas identified in this study in terms of utility natural gas energy efficiency efforts."

"Information is provided in the table regarding four categories of legislative/regulatory structure:

1. whether there is a legal requirement in the state to provide natural gas energy efficiency programs;
2. whether there is an approved program cost-recovery mechanism in place;
3. whether there is a mechanism for the utility to earn shareholder incentives for good performance with its natural gas energy efficiency program; and
4. whether there is a mechanism in place for utilities to recover "lost revenues" resulting from their natural gas energy efficiency programs."

Table 2: Summary of Legislative and Regulatory Mechanisms

State	Legal Requirement	Cost-Recovery	Shareholder Incentives	Lost-Revenue Recovery	Other Mechanisms
CA	Yes (required by statute)	Yes (gas public purpose	No	No	Also a system benefit charge for low-income

		surcharge)			energy efficiency programs
MA	No (encouraged by regulators)	Yes ("conservation charges" approved in company-specific regulatory cases)	Yes (some gas utilities do have incentive mechanisms)	Yes (most utilities have some recovery mechanism)	Statute requires statewide energy audit program. Funded by small customer charge, administered by state.
MN	Yes (required by statute)	Yes (gas utilities required to spend 0.5% of revenues)	Yes (Commission approved mechanism)	No (used to, was replaced by incentive mechanism)	No
NJ	Yes (required by statute)	Yes ("societal benefits charge" on customer bills)	No (used to; no current mechanism)	No (no current authorization, issue is under review)	No
Ontario, Canada	Yes (Ontario Energy Board order)	Yes (included in rates, also has a "DSM Variance Account" to reconcile over- and under-spending on EE by utility)	Yes (one major utility has a shared savings mechanism (SSM) with + and – incentives)	Yes (a lost revenue adjustment mechanism)	No
OR	Yes (for residential gas space heat customers; for others, EE efforts are encouraged by PUC)	Yes (thru balancing accounts, but largest gas utility has a surcharge for EE with funds transferred to a state agency)	No	Yes (although now N/A for the largest gas utility, which has decoupling)	Utilities required by Statute to provide free energy audits and loans/rebates for residential gas space heat customers.
WA	No (encouraged by regulators)	Yes (covered in utility-specific regulatory orders)	No	No	Commission requires "least cost planning," comparing energy efficiency to gas purchasing options.
State	**Legal Requirement**	**Cost-Recovery**	**Shareholder Incentives**	**Lost-Revenue Recovery**	**Other Mechanisms**
VT	Yes (required by statue and regulatory orders)	Yes (included in rates and reviewed in rate cases)	No	Yes (net lost revenues are eligible for recovery in rates cases)	The electricity energy "efficiency utility" in VT operates programs that also produce gas savings.
WI	Yes (required by statute)	Yes (certain funding amounts must by	N/A (programs are administered by a	No	Statute allows utility to spend more on EE, beyond the minimum it must send to the state, if it wishes.

		transferred by utilities to the state public benefits EE program)	state agency)		

Exemplary Natural Gas Efficiency Programs

"One of the main objectives of this project was to identify and profile examples of outstanding natural gas efficiency programs—those in place that are highly successful in improving the energy efficiency of customer end-uses."

"ACEEE staff made the final selections of programs to feature in this report. We considered a number of criteria for our selections, namely:

- *Positive energy savings impact:* Demonstrated ability of the program to deliver substantial immediate or near-term therm savings from energy efficiency. Programs could be noteworthy due to overall total magnitude of impact (i.e., very large programs) or in terms of amount of impact per dollar spent (i.e., very cost-effective programs).
- *Replicability:* Programs that are well documented and have characteristics amenable to easily replicating the program design in other settings.
- *Evaluation results:* Programs that have used good quality *ex post facto* evaluation/verification methodologies to document savings impact and/or market effects achieved by the program received more favorable consideration than those for which good quality evaluation results were not available.
- *Qualitative assessment:* Achievements of the program in terms of noteworthy program implementation performance, customer participation, participant satisfaction, stakeholder support, etc. also were factors considered."

"Our review and analysis of programs selected and profiled in this study revealed a number of general lessons learned, including:

- Some newly created programs, as well as existing programs that were significantly "made-over," have achieved rapid success in the market.
- Some organizations have achieved success with a single program, while other organizations have achieved success with a comprehensive portfolio of programs and services. In the latter case, there likely are significant cross-over benefits from individual programs within the portfolio as customers have a greater number of options to meet their specific needs.
- A factor in the success of long-standing programs is that they have had time to develop, mature, and earn consumer confidence.

- Incentive levels need to be periodically evaluated—both from the perspective of changing avoided costs, but also relative to market conditions (including penetration rates and measure costs).
- The best programs work as a catalyst within the target markets by working with existing market participants to make them successful according to their own specific objectives.
- Regulatory support is a crucial factor in the success of natural gas energy efficiency programs, but is not the only motivation for regulated companies to offer programs. In many of the programs we profile, the companies also see value in helping their customers better manage costs and receive other benefits from energy-efficient technologies. In some cases, the companies themselves sought regulatory support of their programs in order to make them viable. To the extent that policy/regulatory interests and utility self-interest can be aligned, energy efficiency programs have a better chance of flourishing."

"Program Characteristics and Common Traits

Targeted End-Uses and Technologies

Residential. For residential customers, programs target the two primary natural gas end-uses: space and water heating. Technologies and measures for improving space heating efficiency include weatherization (reducing heat losses through the building envelope by reducing air infiltration and increasing insulation levels), installation of energy-efficient windows, duct sealing/insulating, high-efficiency furnaces and boilers, and improved controls, such as with set-back thermostats.

Measures to reduce natural gas use for water heating can either address hot water supply or domestic uses of hot water. Measures that can improve the efficiency of hot water supply include installation of energy-efficient water heaters, adding insulation to existing water heaters that are under-insulated, adding insulation to hot water supply pipes, and reducing set-points of water heaters. Measures to reduce demand for domestic hot water include resource-efficient clothes washers, energy-efficient dishwashers, faucet aerators, and low-flow showerheads.

Commercial/Industrial. C/I efficiency measures offered by programs also target space heating and water heating, but also address process energy use, which can be the dominant end-use of energy for many C/I customers. For space heating, the primary technologies targeted are more efficient boilers and HVAC equipment, including control systems. In new construction, programs may target more efficient building envelopes and related means to reduce space heating demand.

Improving energy efficiency for process energy use also may involve improved efficiency of boilers and control equipment. Measures might also

be promoted to reduce energy losses associated with end-uses, such as for gas-saving commercial kitchen exhaust hoods."

Table 3: Exemplary Natural Gas Energy Efficiency Programs

Program Name	Organization(s)
Residential Retrofit	
HomeBase Retrofit Program	Vermont Gas Systems, Inc.
Residential Weatherization Program	KeySpan Energy Delivery
Home Performance with ENERGY STAR®	New York State Energy Research and Development Authority
Residential Audit	
Residential Home Performance Audit Program	CenterPoint Energy Minnegasco
Residential Space Heating Equipment	
Joint Gas & Electric High Efficiency Furnace Rebate Program	GasNetworks®
High Efficiency Furnace Program	NW Natural
High Efficiency Furnace Programs	Gaz Métro
HomeBase Equipment Replacement Program	Vermont Gas Systems, Inc
Residential Windows	
ENERGY STAR® Residential Windows Program	Northwest Energy Efficiency Alliance
Residential New Construction	
ENERGY STAR® Homes	Joint Management Committee (Massachusetts)
New Jersey ENERGY STAR® Homes	New Jersey Clean Energy Program
Vermont ENERGY STAR® Homes	Efficiency Vermont/Vermont Gas Systems, Inc.
Residential Low-Income Single Family	
Low-Income Gas Program	NSTAR Gas Company
Non-Profit Affordable Housing Project	CenterPoint Energy Minnegasco, Habitat for Humanity Project for Pride in Living, and the Greater Metropolita Housing Corporation
Low-Income Usage Reduction Program (LIURP)	National Fuel
New Jersey Comfort Partners Program	New Jersey Clean Energy Program
Residential Multifamily	
Multifamily Low-Income Program	Efficiency Vermont, Vermont Gas Systems, Inc. and t Burlington Electric Department
Apartment and Condo Efficiency Services	Focus on Energy
Residential Appliances	
ENERGY STAR® Products	Wisconsin Energy Conservation Corporation
Commercial/Industrial Technical Assistance and Demonstration	
New York Energy $mart^{SM} FlexTech Program	New York State Energy Research and Development Authority
Multifamily and C&I Building Practices and Technology Demonstration Program	KeySpan Energy Delivery
Commercial/Industrial Building and Equipment Retrofit	
WorkPlace Equipment Replacement Program and WorkPlace Retrofit Program	Vermont Gas Systems, Inc
Flexible Gas-Efficiency Portfolio Standard	Avista Utilities
Boiler Efficiency	Xcel Energy
Custom Process Rebate	CenterPoint Energy Minnegasco
Commercial/Industrial New Construction	
New Jersey SmartStart Buildings®	New Jersey Clean Energy Program
Program Name	Organization(s)
Energy Design Assistance	Xcel Energy, the Weidt Group, Herzog/Wheeler & Associates
WorkPlace New Construction Program	Vermont Gas Systems, Inc

Commercial/Industrial Small Business	
2002 Express Efficiency	Pacific Gas and Electric Company
Special Case Studies: Comprehensive Portfolios and Collaboratives	
Large Utility Effort through Multiple Local Distribution Companies: *Comprehensive Program Portfolio*	KeySpan Energy Delivery New England
Single Investor-Owned Utility: *Comprehensive Program Portfolio*	Vermont Gas Systems, Inc
Municipal Utilities Collaborative Program: *Conserve & Save*	The Triad: Austin Utilities, Owatonna Public Utilities and Rochester Public Utilities
Multi-party collaborative: *Massachusetts Low Income Energy Affordability Network*	Massachusetts Department of Housing and Community Development in collaboration with KeySpan Energy Delivery New England
Regional Multi-Utility Collaborative: *Comprehensive Program Portfolio*	GasNetworks®

> ”Our research for this study shows that there clearly are a number of excellent programs being provided to natural gas customers to reduce their use of natural gas through efficiency improvements. Programs exist for all types of customers and for all principal natural gas end-use technologies. Some organizations offer comprehensive portfolios of services, while others may offer a single-focused program.”
>
> “The challenging natural gas market situation—higher prices and constrained supplies—is not likely to go away for years, if ever. Utility companies, governments, and related organizations should view natural gas efficiency programs as both a near-term and long-term element in an overall strategy of helping natural gas customers manage their energy costs, as well as helping our economy deal with higher market energy prices. Some actions can be taken now to address very near-term conditions, while other actions can be taken over the next few years to begin laying the foundation for long-term beneficial effects. This report presents many examples of successful energy efficiency programs that could be applied to each of those time frames.”

What are the costs associated with natural gas energy efficiency programs? ACEEE’s report, Examining the Potential for Energy Efficiency To Help Address the Natural Gas Crisis in the Midwest offers a summary of this topic:

> “Costs to Achieve These Savings
>
> As one might expect, in order to achieve these substantial economic benefits there would need to be significant investments in improving energy efficiency. To estimate these associated costs, ACEEE researched its existing data sets and the extensive literature available within the industry on the costs involved in acquiring energy efficiency savings.

As a general frame of reference, there is considerable research from leading states to document that a portfolio of electric energy efficiency programs can save electricity at a cost of 3 cents/kWh, and a portfolio of natural gas energy efficiency programs can save natural gas at a cost of $1.50 per Mcf (Elliott et al. 2003). For this study, ACEEE identified costs specifically at the customer sector level (residential, commercial, and industrial) and applied those costs in proportion to where the study projected that the electricity and natural gas consumption reductions would need to be achieved. Tables 21 and 22 provide the cost estimates developed for each sector and the weighted overall cost (weighted by the proportion of overall energy savings expected from each sector)."

Table 21. Cost per Mcf to Achieve Savings
Natural Gas

Sector	Technology Cost	Admin. Adder	Cost of Saved Energy
Residential	$1.920	25%	$2.57
Commercial	$0.667	20%	$0.86
Industrial	$0.600	15%	$0.74
Weighted Overall Cost			$1.67

Table 22. Cost per kWh to Achieve Savings
Electric

Sector	Technology Cost	Admin. Adder	Cost of Saved Energy
Residential	$0.033	25%	$0.044
Commercial	$0.019	20%	$0.024
Industrial	$0.016	15%	$0.020
Weighted Overall Cost			$0.029

"Consistent with patterns observed in decades of research in the energy efficiency field, the levelized cost per lifetime unit of energy saved is the most expensive in the residential sector ($2.57 per Mcf and $.044 per kWh), followed by the commercial sector ($.86 per Mcf and $.024 per kWh), and least expensive in the industrial sector ($.74 per Mcf and $.02 per kWh). More importantly, all of these costs of conserved energy are much cheaper than the corresponding costs to obtain "supply side" energy resources,[1] thus these energy efficiency programs would be very cost-effective just for the energy "resource" they provide…without even including their beneficial impacts on lowering wholesale market prices. When those larger

[1] For example, the projected wholesale cost of natural gas in 2006 is over $7.00 per Mcf, and a typical average cost for delivered electricity might be in the range of 5 to 6 cents per kWh.

benefits are taken into account, the benefits to consumers exceed the costs by nearly 4 to 1."

Policy Options and Issues

Clearly, from the background information and evaluations, there appears to be potential for significant energy and cost savings through wise investments in Kansas. What questions about an energy conservation and efficiency plan that is tailored for conditions in Kansas need to be answered?

- What are the goals for the programs?
- Who will conduct the programs?
- Who will evaluate the programs?
- How will performance be measured and evaluated?
- What is a suitable time frame for the programs to start and achieve results?
- What funding amounts should be invested from what sources?
- Should programs be voluntary? For what entities or agencies?
- Should programs be mandatory? For what entities or agencies?
- What end use sectors should be addressed?
- What will be the geographic areas served? Statewide? Utility service territory? Other agency service areas?
- What is necessary in terms of marketing and promotion? At what sector or geographic levels?
- What technical assistance, education and awareness are necessary to achieve expected performance?

The Energy Efficiency Policy Toolkit – May 2006 , a document produced by the Regulatory Assistance Project, (RAP) provides an excellent compendium of policy options/issues and inventory of state actions for consideration in developing choices for Kansas. A workshop for the KCC was conducted by RAP in January and another is planned in August of this year. The power point presented at that workshop is included in the references for this document. Here are excerpts from this document to summarize the most common policy choices and issues to be addressed:

Energy Efficiency as a Resource

"Available, cost-effective energy efficiency could greatly reduce the current demand for electricity and natural gas in the US. Even a modestly aggressive program could meet a high percentage of the load growth we now face. Using untapped efficiency is the single most effective step energy and energy market regulators can take to reduce environmental pollution, power costs, and price volatility."

Energy Efficiency is a Resource

"The required policy decision is that energy efficiency is a resource to be acquired on a basis equivalent to that of supply side resources at all levels within the electric system: generation, transmission, and distribution, as well as the natural gas supply system. When costs are the same, efficiency should be acquired first."

Align Utility Profit Motives with Efficiency Investment Requirements

"In conventional "cost plus" utility regulation, utility revenues and profits are linked to unit (kW, kWh, mcf or therms) sales. Under this system, loss of sales due to successful implementation of energy efficiency will lower utility profitability, and the effect may be quite powerful. For example, a 5% decrease in sales can lead to a 25% decrease in net profit for an integrated utility. For a stand-alone distribution utility, the loss to net profit is even greater – about double the impact. This basic sales incentive is at odds with a requirement to invest in cost-effective energy efficiency. Policies can, instead, align utilities' profit motives with acquisition of all cost-effective energy efficiency.

The most effective method for eliminating this sales incentive/efficiency disincentive is to decouple utility revenues from its sales. A utility's revenue requirement is determined through ordinary rate cases. Differences between the allowed revenues and actual revenues received in each ensuing year can be tracked on a per-customer or other basis. The difference (positive or negative) is flowed back to customers in a small adjustment to unit rates in the following year.

Another method of addressing lost sales revenues due to utility ratepayer funded efficiency investments is through an adjustment that tracks the implementation of energy efficiency and uses statistical means to determine lost revenues. Recovery of lost revenue (actually, net lost revenue, which accounts for utility cost savings attributable to the efficiency investment) can be contingent on achieving certain energy efficiency program goals.

States also can provide increased or diminished points on allowed rate of return for meeting predetermined (high and higher) levels of successful efficiency implementation."

Regulatory Proceedings Establishing the Efficiency Resource

"The regulatory requirement that a utility or other licensed provider of electricity or gas service invest in all cost-effective energy efficiency can be established by rule, by rate case decision, by order in a Certificate of Need determination, in standard offer service resource decisions, or in the creation of funds to be spent to enhance public goods within the electricity system, such as System Benefit Charges (SBC) or Public Benefits Funds (PBF). In some states, the requirement may result from joint decisions of the legislature and the utility regulatory commission.

"Regarding electricity, many states have Integrated Resource Planning (IRP) requirements which require demand as well as supply-side investment. Others, such as California and Montana, that have moved towards greater competition, require that the provider of electrical service to regulated customers(standard offer or default service) acquire a long run portfolio of integrated resources, and that the distribution utility (whether or not the provider of energy services) also file an integrated resource plan."

"Investing in cost-effective energy efficiency at the generation, transmission, or

distribution level requires establishing criteria for determining the cost-effectiveness of demand-side resources. Standard criteria are used to compare the costs and benefits of efficiency investments. These cost-effectiveness tests measure several perspectives: for society as a whole (Total Resource Cost), for all customers collectively of the utility (Utility Cost), and the price impact on non-participant ratepayers (Rate Impact Measurement). The available reservoir of energy efficiency is significantly dependent on the cost-effectiveness tests used to decide what programs will be invested in. States with the most successful efficiency development have used TRC as the primary test, while taking into account the information provided by the other tests."

Establish the Measure of Cost Effectiveness

"Investing in cost-effective energy efficiency at the generation, transmission, or distribution level requires establishing criteria for determining the cost-effectiveness of demand-side resources. Standard criteria are used to compare the costs and benefits of efficiency investments. These cost-effectiveness tests measure several perspectives: for society as a whole (Total Resource Cost), for all customers collectively of the utility (Utility Cost), and the price impact on non-participant ratepayers (Rate Impact Measurement). The available reservoir of energy efficiency is significantly dependent on the cost-effectiveness tests used to decide what programs will be invested in. States with the most successful efficiency development have used TRC as the primary test, while taking into account the information provided by the other tests."

Establish the Appropriate Method to Compare Supply Costs To Demand Reduction Costs

"Cost comparisons need to take into account the way in which a supply or demand side resource changes a utility's load curve (hourly demand), as each hour has its own costs. Averaging costs across many hours often will fail to reveal the true value of a demand side resource. (The same can happen with renewable and customer-owned resources. A section specific to these resources may be added to this toolkit at a later date.)"

System Benefit Charge (SBC) or Public Goods Charge

"These non-bypassable charges, paid by electric or gas ratepayers, were first created by legislation or by utility regulators as a means of ensuring some level of public investment in clean energy in the face of electric industry restructuring. Well known market barriers such a high first cost, high discount rates, split incentives between the owner and occupiers of buildings, etc., limit customer investment in efficiency and prevent society from realizing the full benefits of all cost-effective efficiency. The SBC funds were established to assure continued investment in efficiency but, with a few exceptions, the funds amounted to less per annum than had been spent on efficiency by the previously integrated utility. More problematic, the SBC funds are disconnected from the ongoing economic analysis of future resource acquisition. Worse, these efficiency funds have become a target for state budget officials as a source of general revenue. SBC's can be useful policy but they need to be closely connected to the ongoing resource acquisition decisions."

Demand Response

"At the time of electric system peak, the most expensive and often the most polluting electric sources are called on to maintain reliability. Demand response programs engage customers to give up their right to consume electricity in exchange for some value-based compensation. Under appropriate circumstances, demand response participants enable the system to avoid these high costs and emissions. Furthermore, if demand response can provide a functional equivalent to ten-minute reserves, then costs and pollution associated with maintaining combustion generators on hot stand-by are also avoided. It's important to note, however, that some kinds of demand response can have adverse consequences – for example, if the participant uses polluting on-site generation to replace the electricity it would normally receive from the grid."

Good Rate Design Accurately Reflects Long-Run Cost

"Good rate design will strongly complement clean energy acquisition policies because it reflects the long-term costs of power resources, including more polluting sources. But, rate design alone is not enough to overcome the well known consumer barriers to investment in energy efficiency. Also, because many environmental costs, such as health and atmospheric damage related to carbon emissions, are not included in electricity or gas prices, the price signal received by customers falls short of reflecting true costs."

Cost-Based, Time-Differentiated Rates and Seasonal Rates

"Time-of-use (TOU) and/or real time rates give customers a price signal that encourages efficient use (to the degree that the rates reflect all costs of production, including external ones). There are limitations, however, as the cost of providing TOU signals to customers who do not already have demand meters can overwhelm the system savings expected from voluntary customer response. In addition, absent automated systems that monitor prices and adjust consumption, the relatively small potential savings for (especially) residential and small commercial customers means that these customers are unlikely to consistently respond to price changes unless they are large and sudden. Combining energy efficiency program offerings with inverted block rates and seasonal rates (where costs justify them) is a highly synergistic strategy and a reasonable proxy for TOU rates. Seasonally differentiated rates capture the cost of service differences between summer and winter seasons. Many states experience markedly higher demand due to use of air conditioning in the summer months. A higher seasonal summer rate reflects the higher costs of serving customers in the summer months. By delivering this price signal to customers, seasonal rates help to drive investment towards higher-efficiency air conditioning, with marked environmental gains."

Avoid Bad Rate Design

"Higher fixed charges with lower usage (unit) charges have been advanced recently by several utilities. This rate design is attractive to utilities because it creates a larger assured revenue stream and reduces the risk of lower revenues when lower usage occurs for

whatever reason. The downside is twofold: the design fails to reflect the long-term marginal costs of providing the product, and it removes the price signal to customers to consume electricity and gas efficiently. Moreover, it raises bills for low-volume consumers (i.e., those who consume less than the average) and lowers bills for high-usage customers, including those with high air conditioning usage, who are helping to drive high-cost system peaks. A utility's interest in avoiding risks of revenue loss due to greater use of efficiency is much better addressed through revenue/sales decoupling, described above."

FINAL WORDS

"A common characteristic of states with successful clean energy policies is the presence of a champion—a governor, a legislative leader, a utility commissioner – who has a sustained interest in making clean energy happen and will advocate effectively for it. Another characteristic is a long-term commitment to some degree of energy resource planning.

When working to establish successful clean energy policies, policy makers need to be mindful of the distinction between the initial policy decisions and the myriad follow-up decisions required to actually secure successful long-term development. A state may require electric utilities to collect a systems benefit charge or to file an integrated resource plan that includes all cost-effective energy efficiency, but many crucial steps remain between the policy requirement and the actual deployment of energy efficiency, renewable power, and other clean power resources. Follow through, continued advocacy and consistency matter."

The lessons learned described in the previous paragraphs are also identified in several other policy references.

Key Cornerstones for Success

Clarity of Purpose
There needs to be clarity of stated purpose at every level (from overarching goals to individual program design and evaluation metrics). Clarity begins with the policy reasons for pursuing energy efficiency found in underlying enabling legislation and KCC orders. The KCC needs to know when to step in forcefully and when to step aside. Once an administrative structure has been designed and put it place, it needs some time to prove its operative abilities.

Consistency of Policy over Time.
Energy efficiency programs take time to implement and savings are realized over time. Frequent changes in goals, program design or commitment to purpose does great harm to achieving efficiency results. Further, efficiency policy requires ongoing political support and regular supportive public pronouncements from policy makers.

Consensus of Key Stakeholders
Consensus of key stakeholders, as to goals and structure, as well as program design,

measurement metrics, and performance based regulation are critical. At a minimum, key stakeholders include the utilities and the regulators. Ideally, it includes all major interveners, customer classes, environmental and low income stakeholders. The broader the consensus, the more successful programs and energy savings results will be.

Energy efficiency programs can be usefully grouped into two major categories. ***Resource acquisition*** programs are designed to procure "negawatts," units of saved energy or reduced peak demand that are less expensive than additional units of consumed energy or additional electric generating capacity required to serve peak loads. Resource acquisition programs typically provide incentives rich enough to motive consumers to act now.

Market transformation programs are designed to change the way consumers and businesses think about energy consumption, and to promote the manufacturing, distribution and retail sale of energy efficiency equipment. Market transformation programs are designed to motivate consumers who have already decided to make a purchase, for example of a new appliance, to buy the most energy efficient appliance available.

Funding Mechanisms

Public Benefit Funds

System benefit funds are also known as public benefit funds, clean energy funds and system benefits charges in varying states. A minor charge collected on a customer's utility bill each month finances the fund, which, in turn, supports efficiency programs, low-income weatherization assistance, renewable energy programs, energy education, and research and development activities. The charge might be a flat rate each month or based on usage (per kilowatt hour). Instead of a customer charge, some states collect funds through specified contributions from utilities.

Important policy points to note are that a system benefits charge should be competitively neutral and non-bypassable. This means that each utility is required to include the system benefit charge on customer bills and all customers pay the charge. During the recent years of budget shortfalls, a few states used their system benefit fund money to help close a state budget gap. Policymakers may want to consider means to isolate the fund from being used for non-energy efficiency purposes.

Utility Demand Side Management

Utility Demand Side Management refers to activities that utilities may undertake to reduce or change customer demand for electricity. A significant barrier to energy efficiency is the throughput incentive, which bases a utility's revenue stream on the amount of power it sells. Energy efficiency measures reduce 'throughput' of power. Under some rate structures, efficiency investments cause loss of profits that are much greater than a simple loss of revenue. In some cases, a utility that loses 1% in power sales suffers a 5% reduction in profit.

Several means exist to help overcome this barrier. One is to remove or 'decoupling' the link between a utility's profits and the amount of energy it sells through the use of performance-based ratemaking. This rate structure gives utilities financial rewards for improving efficiency and lowers the bills of customers who save energy or use it during off-peak times. California, Oregon, and Washington have decoupled electric and/or natural gas sales volume from revenues.

Another method is to allow 'lost base revenue adjustments', where commissions allow utilities to adjust rates to recover the revenues lost through reduced sales. States could also choose to connect the amount of recoverable revenue to energy efficiency goals. If the utility meets its efficiency goals, it is permitted to recover those funds by adjusting rates. States that have enacted lost revenue adjustments include Indiana, Massachusetts, Michigan, Ohio, and Rhode Island. The final area in which states can help overcome the throughput incentive is by offering utilities an incentive to increase efficiency. Nevada allows utilities to earn a higher return for investing in efficiency, and Minnesota lets utilities share in the savings from efficiency.

Performance Contracting

Performance contracting uses future energy savings to pay back the cost of efficient equipment. Examples of projects that performance contracting can finance include replacement of boilers, chillers, windows, insulation, and fans. This financing method is often used to finance computerized building energy management control systems, which track and control energy use throughout a building. An energy service company (or energy management company) initially purchases, installs, and operates the product and guarantees the customer that a certain amount of energy savings will follow. Usually, the savings are guaranteed to meet or exceed the annual payments that the customer must make for the equipment over the contract period. This energy service company can obtain financing in a number of ways, including a lease-purchase agreement- described in detail later in this report. The energy service company earns its money by sharing a portion of the customer's energy savings.

This financing method is a good fit for buildings that:
-Are larger than 40,000 square feet
-Generate energy bills greater than $40,000 per year
-Are aging or have aging equipment that is ready for replacement
-Have recurring maintenance problems or high maintenance costs
-Cause complaints among building occupants about heating, ventilation, air conditioning, or lighting
-Have scarce budget resources
-Are maintained by staff that are already too busy and/or lack energy expertise

Tax Incentives

Many states offer tax incentives on energy efficiency equipment that exempt, reduce or

credit the tax on purchases of efficient equipment. Tax incentives lessen the upfront costs of energy efficient products, speed up market acceptance and increase market share for energy efficient products and services.

Tax incentives are normally developed at the legislative level. The state benefits from reduced demand for energy supplies and electricity infrastructure. Energy efficiency tax incentives include sales, corporate, income and property tax incentives.

- Sales tax reductions or waivers generally reduce or remove the state sales tax from the cost or installation of energy efficient equipment.
- Corporate incentives offer tax credits to corporations against the cost or installation of efficiency equipment.
- Income tax incentives allow taxpaying state residents to cover a portion of the cost or installation of efficiency equipment with an income tax deduction from their adjusted gross income.
- Property tax incentives range from local property exemptions to special, reduced, property assessment for value added by energy efficiency equipment.

Experiences from states that have developed energy efficient tax incentives yield several major lessons:
(1) it is important to consider the program funding level;
(2) evaluate the program to measure success;
(3) define the duration of the incentive;
(4) examine complementary policy initiatives and appropriate credit amounts; and
(5) funding caps are useful to avoid excess state revenue loss.

Capital Bonding

A bond is a government-issued debt certificate or promissory note that guarantees payment of the efficiency investment plus interest for a specified time. Energy savings from the efficiency equipment cover the financing costs. State government-issued bonds have low interest rates that make them attractive. Generally, a bond is more appropriate for large-scale efficiency projects or several smaller projects where the payback is enough to cover the principle and interest payments associated with the bond.
There are several types of bonds, including:
General obligation bonds—The issuing government commits its assets and taxing powers to pay the debt. This type of bond usually faces a debt ceiling, which is a limit to how high the debt can go. These bonds rely on taxpayer funds to repay the principle and interest.
Revenue bonds—Also called 'limited obligation bonds', revenue bonds are legally tied to a dedicated repayment source (rather than the creditworthiness of the government, as with general obligation bonds). There is no debt ceiling for revenue bonds.
Bond banks—States create funding pools—bond banks—to provide accessible funds or to purchase the debt of current local government bond issues. The debt ceiling applies in this case.
The interest rate for a bond stems from several factors, including the tax and credit status of the borrower, and the project cost and risk. Bonds require significant amount of

administrative oversight and can be more costly than other types of financing. Policymakers may set debt-limitation ceilings on bonds. In addition, there may be limits to the types of projects allowed under bonds because of the guaranteed repayment requirement—bonds generally are issued for projects with expected savings.

Loans

Energy efficiency loan programs are another way states support energy efficiency measures. Loan programs are financed in several ways, including bonds, electric bill surcharges and oil overcharge funds (money, which is fast declining that oil companies paid state governments after federal court settlements of alleged violations of oil price controls in the 1970s and early 1980s). Legislation may direct a certain amount of funds from general appropriations or other funding pools for the program as well. State programs are typically able to offer lower interest rates by buying down lender loans. Payback periods typically range from 7-10 years and have low administrative costs. Revolving loan funds, used by many states, usually have a predetermined funding ceiling. Energy savings pay back the loan. State agencies normally administer the program after the legislature approves a funding level.

Grants

Grants are one of the preferred financing options for efficiency improvements because they require no payback. System benefit charges, federal funding, land use fees, and oil overcharge funds often are sources of grant funds. The state energy, environmental or natural resource agency, or public utility commission typically administers energy efficiency grants. States have awarded grants in the residential, commercial, utility, industry, agricultural and public sectors. Grants fund energy efficiency research or commercialization of a technology.

Grant funding often is competitive. The state agency managing the funding will offer a request for proposals. Proposals usually lay out certain requirements, such as a funding request limit or technology restrictions, and may even be as specific to allow only commercially available equipment. In addition, grants may require a total or percentage-based funding match by the grantee to leverage the grant funding.

Tax-Exempt Lease Purchase

A tax- exempt lease purchase agreement is one of the most attractive performance contracting options for state governments. Tax-exempt lease purchase agreements remedy the customary high upfront costs of energy efficiency measures. This option works by allowing energy savings in the future to finance efficiency improvements today and spread capital costs over the lifetime of the efficiency equipment. Under the lease agreement, the lessee makes monthly installment payments toward the cost of the efficiency improvement project (plus interest). At the end of the contract term, often ranging five to ten years (fifteen for large projects), the lessee will own the equipment or acquire it for a small sum, usually one dollar. A tax-exempt lease purchase agreement generally includes non-appropriation language. The language requires the lessee to pay within the current operating budget period, thus there is no long-term debt commitment. If the state government does not appropriate

enough funds for the lessee to make its installment payments, the lender acquires the equipment, and terminates the repayment obligation.

One benefit of a tax-exempt lease purchase agreement, also known as a municipal lease, is that the lender is not subject to federal taxes and can therefore offer a lower interest rate to the lessee. Additionally, the lease and lease payments are considered operating costs, not debt. Commercial leasing corporations, management and financing companies, banks, investment brokers, or equipment manufacturers offer these agreements. This type of financing requires no legislation or voter referendum. Lastly, an energy efficiency project may simply fit into an already existing master leasing agreement.

Only tax-exempt entities, such as cities, counties, school districts, police departments, fire departments and any other governmental entity, qualify for tax-exempt lease purchase agreements.

Pay As You Save

Through an innovative financing program called PAYS®, building owners and tenants can purchase and install energy efficiency products with no upfront payment or debt commitment. A tariffed charge is included on utility bills for as long as the owner or tenant occupies the building. The expected savings from the efficiency equipment exceed the charge on the utility bill. When occupancy ends, the charge is passed on to the next owner/tenant. If the product fails, the owner/tenant is not responsible for paying. PAYS® works in regulated and deregulated energy markets.

The tariffed charge is based on the useful life of the energy efficiency measure. The efficiency measure does not qualify for PAYS® unless the charge is equal to or less than ¾ of the energy savings over ¾ of the useful life of the equipment. For example, if a new energy efficient boiler with a useful life of 16 years is installed in a building, the charge is spread across the building owner or tenant's utility bill for 12 years (¾ of 16 years). The estimated energy savings from installing the efficient boiler will exceed the charge on the utility bill.

PAYS® requires regulatory approval. In some cases, regulators may desire legislative approval to authorize the program. The tariffed charge is treated like any tariffed charge, meaning that non-payment by the owner results in disconnection and a utility can recover bad debt. From a state perspective, the only real cost of implementing PAYS® is the cost to set up the regulations.

States can use any financial mechanism (e.g., bonds) to fund the equipment installations. For instance, the state can float a bond to finance the equipment and the utility will repay the bond from the utility bill tariffed charges. Private capital is the preferred way to institute the program because it does not require state funds. In this case, the utility will repay the private capital supplier.

Energy Efficiency Resource Standards

The following excerpts from the executive summary of the ACEEE publication, Energy Efficiency Resource Standards: Experience and Recommendations provide a brief overview of this policy option.

“An Energy Efficiency Resource Standard (EERS) is a simple, market-based mechanism to encourage more efficient generation, transmission, and use of electricity and natural gas. An EERS consists of electric and/or gas energy savings targets for utilities, often with flexibility to achieve the target through a market-based trading system. All EERS’s include end-user energy saving improvements that are aided and documented by utilities or other program operators.”

“EERS’s are typically implemented at the state level but can also be implemented over smaller or wider areas. With trading, a utility that saves more than its target can sell savings credits to utilities that fall short of their savings targets. Trading would also permit the market to find the lowest-cost savings.”

“So far, states have led EERS efforts and more states should consider policies of this type. Eventually, the federal government should follow these leading states and enact a national EERS so as to expand the savings and benefits throughout the country as well as to provide national emissions reduction and price reduction effects that benefit all states, including those with state EERS’s.”

“We recommend that EERS targets generally start at modest levels (e.g., savings of 0.25% of sales annually) and ramp-up over several years to savings levels currently achieved by the most successful states (e.g., 0.75% to 1.25% of sales annually).”

“Because EERS annual requirements are cumulative, savings would steadily mount. If an EERS calls for 0.75% savings per year, after a two-year ramp-in period, by 2020 annual electricity and natural gas use in the covered region would be reduced by nearly 10%.”

Table 1. Summary of Current and Pending EERS Policies in the U.S.

State	EERS Description	Applies to	Savings Target	Timeframe
California	Sets specific energy and demand savings goals.	Investor-owned utilities	Savings goals set for each program year from 2004 to 2013. The savings target for program year 2013 is: • 23,183 GWh, 4,885 MW peak • 444 MMtherms	2004–2013 Annual MWh, MW, and therm savings adopted for each of these years.
Colorado	Settlement agreement approved by PUC includes specific targets utility will make "best efforts" to achieve.	Public Service of Colorado (the major utility in the state)	320 MW and 800 GWh (40 MW and 100 GWh each year)	2006–2013
Connecticut	Includes energy efficiency at commercial and financial facilities as one eligible source under its Distributed Resources Portfolio Standard (also includes combined heat and power and load management programs).	Investor-owned utilities	Savings goals set for each program year: 1% 2% 3% 4%	2007 2008 2009 2010 and thereafter
Hawaii	Allows efficiency to qualify as a resource under RPS requirements.	Investor-owned utilities	20% of kWh sales (overall RPS target, EE portion not specified)	2020
Illinois	Setting goals as percentage of forecast load growth.	Investor-owned utilities	10% 15% 20% 25%	2006–2008 2009–2011 2012–2014 2015–2017
New Jersey	Two initiatives: 1. Setting energy and demand goals for overall PBF program. 2. Setting goals for savings as a percent of sales.	1. PBF program administrators (which is based on competitive solicitation) 2. Investor-owned utilities	1. 1,814 GWH (four-year total) 2. Conceptual draft calls for 1% per year for a total of 12% in 2016	1. 2005–2008 2. 2005–2016 in conceptual draft
Nevada	Redefines portfolio standard to include energy efficiency as well as renewable energy.	Investor-owned utilities	Energy efficiency can meet up to 25% of the energy provider's portfolio standard. Combined EE/RE standard is: 6% 9% 12% 15% 18% 20%	2005–2006 2007–2008 2009–2010 2011–2012 2013–2014 2015 and thereafter
Pennsylvania	Includes energy efficiency as part of a two-tier alternative energy portfolio standard	Investor-owned utilities	Tier 2 goals (including EE): 4.2% 6.2% 8.2% 10.0%	Years 1–4 Years 5–9 Years 10–14 Years 15 and thereafter
Texas	Sets goals as percentage of forecast load growth	Investor-owned utilities	10%	2004 and thereafter
Vermont	Sets energy and demand goals for overall PBF program	Program administrator	83,766 MWh 119,490 MWh 204,000 MWh	2000-2002 2003-2005 2006-2008

Method of Implementation

Perhaps the most thorough discussion of implementation models is delivered by Who Should Deliver Ratepayer Funded Energy Efficiency? A Survey and Discussion Paper prepared by Cheryl Harrington and Catherine Murray of the Regulatory Assistance Project. Their conclusion captures the essence of the options and recommendation for Kansas.

> "We find that the more robust ratepayer funded efficiency programs are less the result of administrative structure per se, than the clear and consistent commitment of policy makers. It is our view that either utility administration or administration by a third party non-governmental can work well. Relevant factors to consider when comparing utility to independent administration are: responsiveness to PUC direction, regulatory performance incentives that are properly constructed and implemented, staff competency, sustainability of the institution and its budget sources, and, link to system planning decisions.
>
> We generally view state agency administration (with the exception of the unique quasi-independent character of NYSERDA) to be a weaker third choice, State agencies are less likely to be able to maintain the required flexibility to be effective efficiency entrepreneurs, especially for market transformation programs. State agents are also vulnerable to governmental and political events that are external to the energy efficiency efforts themselves. Finally, as mentioned earlier , one should be cautious about placing the state in what is viewed by other market participants as a competitive business.
>
> Finally, we urge careful consideration of the value of creating stakeholder consensus and, if possible, the use of collaborative program design regardless of the administrative structure."

Administrative Structures for Ratepayer Funded Energy Efficiency[1]

State/Entity	Program Administrator	Primary Review Authority	Significant Partners	Funding Mechanism	Integrated w/ Long Run Resource Plan
Oregon	Independent	Utility Commission		SBC 2.49% revenues for EE; 68% admin by Energy Trust	Yes
Vermont	Independent	Utility Commission	Advisory Committee	SBC not more than 2.9 mills/kWh of total statewide retail sales	Yes
Connecticut	Distribution Utilities	Utility Commission	Energy Cons. Mgmt. Board	surcharge on sales 3/mills kWh	No
Massachusetts	Distribution Utilities	Utility Commission	Collaborative	SBC 2.5 mills/kWh	No
New Jersey	Distribution Utilities and Utility Comm.	Utility Commission	Collaborative	total SBC $215m. 2002: $185.2m for EE and old DSM	No
Colorado	Vertically Integrated Utilities	Utility Commission		tariff riders	Yes
Florida	Vertically Integrated Utilities	Utility Commission		rates	Yes
Minnesota	Vertically Integrated Utilities	Dept of Commerce w/appeal to PUC		1.5-2.0% of revenues	Yes
Washington	Vertically Integrated Utilities	Utility Commission		tariff riders	Yes
Illinois	Dept. of Commerce & Econ. Opp.	Legislature		pro-rata share of $3m/yr based on prior year's sales	No
Maine	Public Utilities Commission	Utility Commission		SBC varies: 0.5% revenue to 1.5 mills kWh	No
New York	NYSERDA	Utility Commission	SBC Advisory Group	SBC: pro-rata share of $150 million/yr based on 1999 revenue	No
Ohio	Dept. of Development	Legislature		Revolving loanfund: up to $100m total after ten years. Tariff rider.	No
Wisconsin	Dept. of Admin.	Legislature		Historic utility DSM funds and new statutory fees	No
Bonneville Power Administration	Bonneville Power Admin.	Bonneville Power Administration	Regional Technical Forum	embedded in wholesale power rates	Yes
Australia: NSW	Independent Pricing & Regulatory Tribunal	Minister for Energy		Costs of abatement certificates recovered in rates	Yes
Brazil	Distribution Utilities		PROCEL	1.0% of revenues	No
Norway	ENOVA (public agency)	Storting (Parliament)		tariff rider and government appropriation	Yes
United Kingdom	Distribution Utilities	Ofgem (Federal utility commission)		Required energy savings targets with penalties for non-compliance	Yes

[1]This chart summarizes the state details found in Section Two of the Report. The important features for each state can only be understood by reading Section Two.
This chart, which may help provide and overview, has necessarily simplified important differences and details.
[2]York and Kushler (ACEEE 2003) Please not the savings figures are at least two years old and may not reflect recent activities, especially for the newer administrative structures.

Administrative Structures for Ratepayer Funded Energy Efficiency - continued

Primary Program Goals	Benefit Cost Test	Who Performs Evaluations	Financial Incentives	2000 Savings kWh/Capita[2]
Market transformation & resource acquisition	Societal Benefits test and Utility test	third parties	performance incentives for utilities uring transition. Then, none for independent administrator or utilities	527
Market transformation & resource acquisition	Societal Benefits test	Vermont Dept. of Public Service	none for utilities after transition; performance incentives for independent administrator	284
Resource acquisition & market transformation	Utility test and Total Resource Cost test	utilities and/or third parties	performance incentives	597
Resource acquisition & market transformation	Total Resource Cost test	third parties	performance incentives	323
Resource acquisition & market transformation	Total Resource Cost test	utilities and/or third parties	possible: performance incentives and lost revenue	303
Resource acquisition (demand management)	was:TRC. Beginning 2003: Rate Impact Measure	utilities and/or third parties	None	114
Resource acquisition (demand management)	Rate Impact Measure	utilities	lost revenues on a case by case basis	429
Resource acquisition	Modified Societal Benefits test	utilities	performance incentives	662
Resource acquisition (energy savings)	Utility Test and Total Resource Cost test	utilities and/or third parties	None	604
Low-income energy savings	Utility Test	Dept. of Commerce and Econ. Opp.	None	5
Resource acquisition and market transformation	Modified Societal Benefits test	third parties	None	40
Resource acquisition and market transformation	Total Resource Cost, Participant and Utility tests (NYSERDA=utility	NYSERDA and/or third parties	None	169
Resource acquisition	Simple payback	proven standards and technologies	None	81
Market transformation & resource acquisition	Total Resource Cost and Societal Benefits tests	program administrators and/or third parties	Some shared savings	670
Resource acquisition (energy savings)	Utility Test	deemed measures and measure contracts	None	not available
GHG emissions reduction	not applicable	third parties	Trading and competitive market incentives; Penalties for shortfall	not available
Resource acquisition	Utility Test	utilities	None	not available
Resource acquisition	not specified	not specified	None	not available
GHG emissions reduction	not applicable	utilities and third parties	Competitive market incentives; Penalties for non-compliance	not available

Where Does Kansas Rank?

Where does Kansas rank in terms of energy efficiency and conservation programs and efforts? With a few exceptions national studies* (ACEEE State Scorecard on Utility and Public Benefits Energy Efficiency Programs – An Update 2002) shows Kansas at the bottom in:

- Energy efficiency expenditures as a percentage of utility revenues;
- Energy efficiency expenditures per capita
- Electricity savings as a percentage of electricity sales
- And lacking in most all EE policy categories

Review of the Alliance to Save Energy Web site on the status of Kansas Programs shows the following regarding policies in place or other initiatives:

Appliance Standards

Currently, there are no state energy efficiency appliance standards in Kansas.

Public Benefits Fund

Currently, there is no public benefits fund for energy efficiency programs in Kansas.

Transportation Initiatives

Currently, there are no energy efficiency transportation initiatives in Kansas.

Energy Efficient Tax Incentives

Currently, there are no energy efficiency tax incentives in Kansas.

Carbon Cap & Trade

Currently, there is not a carbon cap and trade program in Kansas.

Energy-Efficiency Funds

Currently, there are no energy-efficiency funds available in Kansas.

Building Codes

Residential Code: IECC 2003 and/or fulfill the Kansas Energy Efficiency Disclosure Form, mandatory statewide.

Commercial Code: IECC 2003/ASHRAE/IESNA 90.1-2001, mandatory statewide.

Click here for more information.http://www.kcc.state.ks.us/energy/building.htm

Other Legislation

A bill signed in April 2006 allows a municipality or state agency to enter into a contract or lease-purchase agreement for qualified energy conservation measures.

The last two items are worth noting, but explanation is necessary. While our building codes status is actually quite current, compliance and enforcement efforts are questionable in terms of verifying that buildings are achieving the goals envisioned. Enforcement is up to local jurisdictions to adopt and enforce as there is no statewide building code. Compliance is self certification through submission of the appropriate forms to home purchasers as required and in the performance of architectural and engineering services and specifications on the commercial side.

Certainly a bright spot is the Facility Conservation Improvement Program, based in the Kansas Energy Office at the KCC, working with approved energy service performance companies to identify cost effective energy saving improvements for state agencies, municipalities, counties and public schools. The savings are used to pay for the costs of the improvements. Of 24 projects completed through September of 2005, over 24 million square feet of space has been evaluated, with over $89 million in projects yielding almost $8 million in annual savings. (Kansas Energy Office 2005 Annual Report)

Another effective program in Kansas is the federally funded Weatherization Assistance Program based in the Kansas Housing Resources Corporation. Using solely federal source funds in 2004 of $4,429,674, 933 owner occupied and 403 rental units in 97 counties were weatherized by local agencies and contractors. The State Budget passed for 2006-2007 includes $2 million additional state dollars from severance tax excess revenue allocated to the weatherization program. This is the first time any state dollars have been budgeted and appropriated for state weatherization activities. In addition, the Budget has $2 million dollars allocated to begin a low interest revolving loan fund and a proposal by the Kansas Housing Resources Corporation has been circulating which begins to define the program and how it will work.

Kansas Utilities

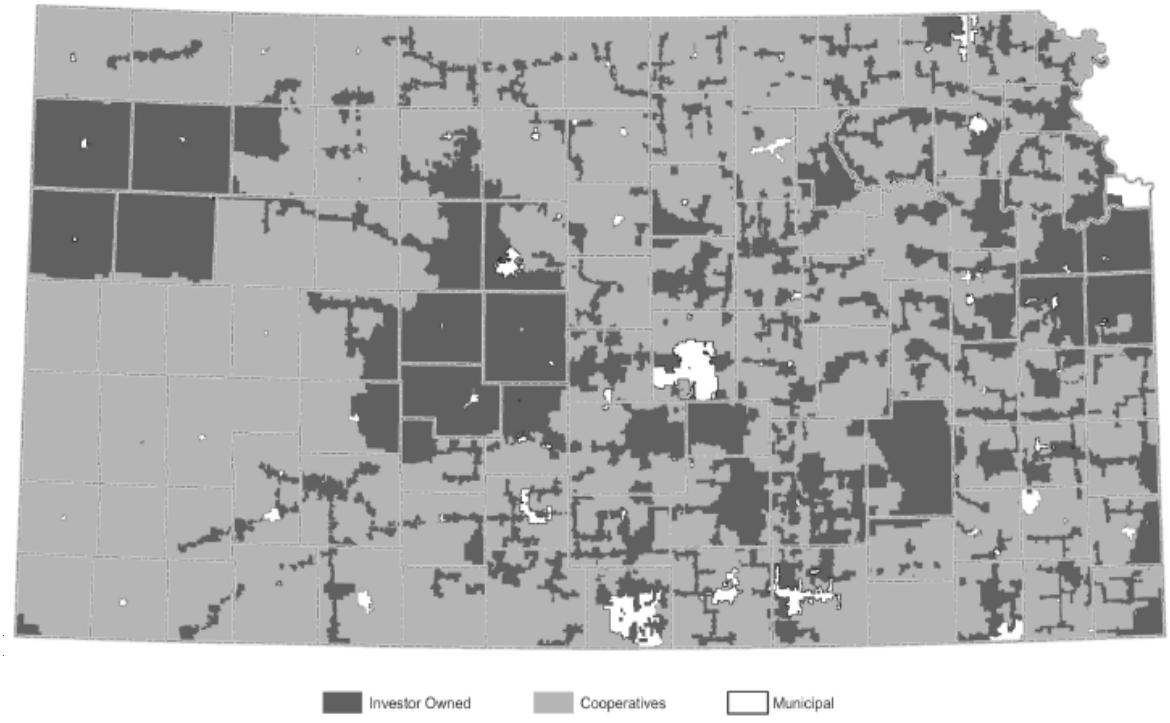


Figure 7—Areas covered by investor-owned, municipal, and cooperative utilities in Kansas (Kansas Corporation Commission).

There are five investor owned utilities serving Kansas, Aquila, Empire District, Kansas City Power & Light, Southwestern Public Service Company, and Westar Energy. They provide electricity to roughly 68% of Kansas consumers.

Kansas Municipal Utilities

There are 120 municipal utilities, ranging in size from the Kansas City Board of Public Utilities (serving nearly 67,000 customers and almost all of Wyandotte County) to the City of Radium, with just 23 customers. They provide service to approximately 17% of the electric customers in the state. Sixty-three of the 120 municipals own and operating generating units. In most cases, however, municipal generation is designed to serve as "peaking units".

Cooperatives

A review of the National Rural Electric Cooperative Association web site lists 32 members in Kansas. There are 28 distribution cooperatives and two generation and transmission cooperatives that provide electricity to approximately 15% of Kansas consumers. The two generation and transmission cooperatives in Kansas are Sunflower Electric Power Corporation, based in Hays, and Kansas Electric Power Cooperative, Inc. (KEPCo), headquartered in Topeka. Organized in 1957, Sunflower is a consumer-owned, nonprofit corporation operated cooperatively by six rural electric distribution cooperatives that serve people located in 34 western Kansas counties. Sunflower provides wholesale power generated by six power plants to its Member cooperatives. KEPCo generates and transmits power for its 19 electric cooperatives which collectively serve approximately 100,000 meters or an estimated 300,000 rural Kansans.

Co-op Name: City, State: Consumers:

Ark Valley Electric Co-op Assn. Hutchinson, KS 4774
Bluestem Electric Cooperative, Inc. Wamego KS 6373
Brown-Atchison Electric Co-op Assn. Horton, KS 3114
Butler REC, Inc. El Dorado, KS 6491
Caney Valley Electric Co-op Assn. Cedar Vale, KS 5199
CMS Electric Co-op, Inc. Meade, KS 4327
Doniphan Electric Co-op Association, Inc. Troy, KS 1645
DS&O Rural Electric Co-op Assn. Solomon, KS 7138
Federated RE Insurance Exchange Lenexa, KS
Flint Hills RECA, Inc. Council Grove, KS 6007
Heartland REC Girard, KS 10542
Kansas Electric Co-ops, Inc. Topeka, KS
Kansas Electric Power Co-op Topeka, KS
Kansas Municipal Energy Agency Mission, KS
Kaw Valley Elec. Cooperative, Inc. Topeka, KS 8544
Lane-Scott Electric Cooperative, Inc. Dighton, KS 2468
Leavenworth-Jefferson Electric Cooperative Mc Louth, KS 7725
Lyon-Coffey Electric Co-op, Inc. Burlington, KS 7507
Midwest Energy, Inc. Hays, KS 46138
Nemaha-Marshall Electric Cooperative Assn., Inc. Axtell KS 3313
Ninnescah RECA, Inc. Pratt, KS 3200
Pioneer Electric Cooperative, Inc. Ulysses, KS 14812
Prairie Land Electric Cooperative Inc. Norton, KS 7857

Radiant Electric Co-op, Inc. Fredonia, KS 4028
Rolling Hills Electric Co-op Mankato, KS 10184
Sedgwick County Electric Cooperative Assn.,Inc. Cheney KS 5022
Sumner-Cowley Electric Coop, Inc. Wellington, KS 4441
Sunflower Electric Power Corp. Hays, KS
Twin Valley Electric Cooperative Altamont KS 2456
Victory Electric Cooperative Assn., Inc. Dodge City, KS 3136
Western Cooperative Electric Assn. Inc. Wa Keeney, KS 4485
Wheatland Electric Co-op, Inc. Scott City, KS 16622

Service Areas of Kansas Electric Cooperatives

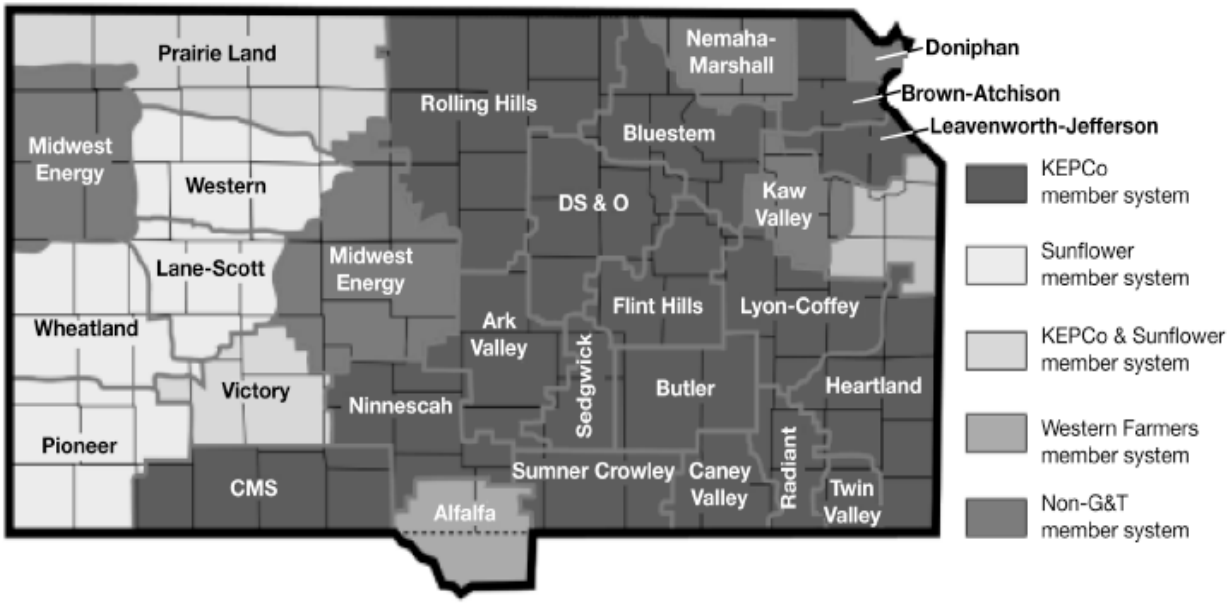


Figure 8—Service areas of Kansas electric cooperatives.

Natural Gas Service

Kansas Gas Service provides natural gas service to more than two-thirds of the state, serving more than 642,000 customers. It distributes natural gas energy to 341 Kansas communities.

What utility programs exist in Kansas that address demand side management, energy efficiency and conservation?

Regulated utilities have had the ability to incorporate into rate case requests energy conservation and efficiency programs and receive an additional rate of return since the early eighties, but none have done so.

A review of web sites shows some online audits through web links, lists and fact sheets of recommended conservation measures, and videos or resources available upon request.

Midwest Energy provides a variety of energy related services for its residential and

commercial customers. The chart below lists services and fees.

Midwest Energy Home "Check-Up" LIST

SERVICE	RESULT	CUSTOMER FEE
Blower Door Test	Measurement of air infiltration and or duct leakage	$50
Energy Rating & Blower Door (new home)	Energy efficiency rating & estimate of annual energy costs	$50
Energy Rating & Blower Door (existing home)	Energy efficiency rating & estimate of annual energy costs	$100
HVAC (Heating, Ventilation & Air Conditioning) Sizing	Calculation of total heat loss/gain & recommendation for proper equipment size	No Charge
Infrared Scanning & Blower Door Residential	Picture of heat loss or temperature excess	$75
Infrared Scanning Commercial	Picture of heat loss or hot spot	$50 per hour
Commercial Energy Audit	Calculation of total heat loss/gain & payback for improvements	$50 minimum
Lighting Design	Design recommendations for inside or outside business	No Charge
Walk through Inspection	Recommend energy conservation measures	No Charge

A web site based review in January showed twelve Kansas based cooperatives offering rebates for heating systems, water heaters, appliances, and two offering in home energy audits.

Voluntary Utility Assistance Programs

Several utilities have voluntary donations programs to augment utility assistance programs. These are charitable efforts that are last resort emergency funds with limited resources and limited times of operation.

Aquila Cares
Funds for utility bills or repairs to vital heating or cooling equipment.

HeatShare
Provides payments toward heating and air conditioning bills and can go toward electricity, natural gas, propane, fuel oil or wood bills. Where sufficient funds are available, grants are available for emergency repairs to furnaces, air conditioners, hot water heaters and other energy related equipment. Assistance may also be available for repairs to broken windows and doors. The elderly and disabled are given priority where funds are limited.

Kansas City Power & Light
Dollar Aide
Customer donations help people in need pay their utility bills year-round, regardless of whether they use electricity, natural gas, propane or fuel oil. KCP&L matches $1 for every $5 contribution.

Kansas Gas Service
Gift of Warmth
Customer contributions are distributed by the Salvation Army to qualifying families.

Pioneer Electric Cooperative, Inc.
We Care
Employees and Trustees participating in the program make a donation from each paycheck to the fund. The money is then distributed to Pioneer Electric members who are in need as a result of illness, accident or other unforeseen event or difficult circumstance. These funds may be used at the family's discretion.

KCPL Proposed Programs for Affordability, Energy Efficiency, and Demand Response

KCC has accepted a plan from KCPL for Affordability, Energy Efficiency, and Demand Response Programs which is subject to regulatory approval. These were developed in a collaborative process with input from KCPL staff, regulatory and government personnel, public interest groups, the Rocky Mountain Institute, the Applied Energy Group, the Regulatory Assistance Project and from information from other utilities and organizations. The chart below provides a summary of programs which are more fully described in two references (Susan Nathan’s testimony before the KCC for KCPL and Appendix B of her testimony).

KCPL Proposed Programs

Proposed Affordability, EE, DR Programs

Subject to Regulatory Approval
February 1, 2005

Summary of Programs

Program	Type	Aff	Res	Sm Com	Med C&I	Large C&I
Affordability						
• Affordable New Homes	Dir Imp	✓				
• Low Income Weatherization	Dir Imp	✓				
Energy Efficiency						
• Online Analysis	Educ		✓			
• Home Performance-Training	Educ		✓			
• Change a Light, Change the World	Dir Imp		✓			
• Cool Homes Program	Dir Imp		✓			
• Energy Star Homes	Dir Imp		✓			
• PAYS-type program	Dir Imp		✓			
• Online Analysis	Educ			✓	✓	✓
• C&I Audits	Educ			✓	✓	✓
• C&I Custom Rebates-Retrofit	Dir Imp			✓	✓	✓
• C&I Custom Rebates-New Const	Dir Imp			✓	✓	✓
• Bldg Operator Certification	Dir Imp				✓	✓
• Research	Research					
Demand Response						
• A/C Cycling	Dmd Rsp		✓	✓		
• The Alliance, an Energy Partnership	Dmd Rsp				✓	✓

A review of these programs for statewide, utility territory, or regional application should be conducted if the KEC chooses to proceed with energy efficiency policy development.

Kansas City Board of Public Utilities – Integrated Resource Plan - August 2005
The KC BPU is required by contract to file an IRP with the Western Area Power Administration (WAPA). The August 2005 Volume VII Addendum evaluates seven existing programs as to costs and benefits and identifies eight proposed future programs and evaluations. This reference should also be reviewed for statewide, utility territories, or regional application if the KEC chooses to proceed with energy efficiency policy development.

A search conducted in January to identify energy efficiency and conservation programs provided by Kansas based cooperatives listed twelve with heating system, heat pump, air conditioning, water heater or appliance rebate or incentive programs, and two who provided in home energy audits. Rebates are in the $50 to $400 range depending on device type and sizing.

Policy Considerations

Here is a list of lessons learned from other programs and program evaluation studies about what energy efficiency programs need to grow and thrive.

- Successful programs are being done by utilities, government agencies and non-profits
- An effective administrative and delivery structure is critical
- Support from customers, regulators, utilities and other key stakeholders
- Stable, adequate funding (States that who have been doing this are all adding significant dollars to their EE efforts as a least cost way to achieve supply, and help reduce bills with minimal rate increases)
- Key Areas to Fund to Achieve Maximum Savings from EE
    - The cost of purchasing the equipment itself –credits, loans
    - The cost of educating consumers about availability and maintenance of EE products – technical assistance
    - Energy Star Program promotion can build on existing system/items
    - Facility managers/operator training
- Programs that demonstrate success
- Efficiency measures are small scale and highly diffuse; need to influence millions of purchase and operating decisions
- Need to combine policies and programs into effective market transformation strategies
- Need to design and operate programs that "make a difference" in the marketplace
- Partnerships are key to working in the market to expand the effects
- Using Energy Star features expands the effects
- Effective evaluation in place to monitor and report results
- Thorough monitoring and evaluation absorbs 5-10% of overall DSM budget
- Important to conduct both impact and process evaluations
- Techniques for evaluating program-induced energy savings are well-developed; include consideration of both "free riders" and "free drivers" (spillover effect)
- Persistence of energy savings is another important evaluation issue

What is the Right Amount of Funding for Energy Efficiency?

Method 1: Use cost-effectiveness tests on past 3-5 years of results
Method 2: Use least-cost resource valuation to model how much is needed
Method 3: Look at historical funding and compare to assessment of next 3-5 year market conditions
Method 4: Conservation supply curves and avoided cost levels
KANSAS – No history so either conduct a market potential study or look at example states for comparables

Questions and Discussion

What will/might work in Kansas?
What are the priorities?
How can we build on existing success with FCIP?
Which sector has greatest potential?
Which implementation agents can secure the "low hanging fruit"?
Who else needs to be at the table?

- What are the goals for the programs?
- Who will conduct the programs?
- Who will evaluate the programs?
- How will performance be measured and evaluated?
- What is a suitable time frame for the programs to start and achieve results?
- What funding amounts should be invested from what sources?
- Should programs be voluntary? For what entities or agencies?
- Should programs be mandatory? For what entities or agencies?
- What end use sectors should be addressed?
- What will be the geographic areas served? Statewide? Utility service territory? Other agency service areas?
- What is necessary in terms of marketing and promotion? At what sector or geographic levels?
- What technical assistance, education and awareness are necessary to achieve desired or targeted performance?

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Policy Option 1: Provide sustained state funding to weatherization, and target structures of greatest need,i.e., those receiving LIHEAP, shutoff candidates, payment deficiencies

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option 2: Direct the KCC to evaluate energy efficiency and conservation in rate cases and establish rate structures and programs to spur and encourage efficiency measures

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option 3: Adopt the WGA Recommended Goals for Kansas

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option 4: Create a low-interest revolving loan program based on the successful NE example, with Governor's proposal as a starting point, building an annual increase to the initial $2 million for the 2007 budget to a targeted level of $10 million

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option 5: Implement a public benefits charge to fund state energy program initiatives, drawing from all utilities for a state wide program

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option 6: Fund technical assistance activities to provide economic and technical feasibility analysis associated with implementing energy efficiency and conservation measures in the residential, commercial and industrial sectors

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties

b. Legislative action
c. budget requirements
d. Implementation timeline

Policy Option 7: Implement all cost-effective energy efficiency programs using the Total Resource Cost test

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option 8: Adopt annual energy savings, load growth, and peak demand reduction goals

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option 9: Adopt a DSM program funding mechanism

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action

c. budget requirements
d. Implementation timeline

Policy Option 10: Develop a robust set of DSM programs for all customer classes, utility by utility

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option 11: Provide investor-owned utilities with financial incentives tied to program performance

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option 12: Form a DSM collaborative to create a statewide DSM program and assist with program design and implementation

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements

d. Implementation timeline

Policy Option 13: Improve and increase education which reinforces principles and practices of efficiency and conservation.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option : Low-Income Affordable New Homes Program

1. Program Description

A partnership between KCP&L and non-profit organizations, including Habitat for Humanity and local government community development organizations, to achieve energy-efficient affordable new housing for the low-income community. Incentives will be available for high efficiency CAC, heat pumps and refrigerators. Financial
incentives will be set at the 111 incremental cost for CAC and heat pumps. A
$200 incentive will be available towards the purchase of an ENERGY STARB
rated refrigerator. Finally, up to $100 will be available towards the purchase of
ENERGY STAR rated lighting fixtures.
The customer incentive budget is based upon 100% homes receiving refrigerator
and lighting incentives and 25% of the homes will receiving high efficiency air
conditioners, and 25% receiving high efficiency heat pumps.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option ONLINE ENERGY INFORMATION AND ANALYSIS PROGRAM USING NEXUS RESIDENTIAL, SUITE

1. PROGRAM DESCRIPTION

The online energy information and analysis program allows all residential customers with computers to access their billing information and comparisons of their usage on a daily, weekly, monthly or annual basis. This tool will analyze what end uses make up what percent of their usage, and provide information on ways to save energy by end use through a searchable resource center. This tool also allows the user to analyze why their bill may have changed fiom one month to another. A home comparison also displays a comparison of the customer's home versus an average similar home via an Energy guide label concept.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option HOME PERF'ORMANCE WITH ENERGY STAR@PROGRAM - TRAINING

1. Program Description

Home Performance with ENERGY STARB is a unique program which enhances the traditional existing home energy audit service. This program uses the ENERGY STAR@brand to help encourage and facilitate whole-house energy improvements to existing housing. This program focuses on the private-sector contractors and service professionals who currently work on existing homes - replacing HVAC systems, adding insulation, installing new windows, etc. The Missouri Home Performance with ENERGY STAR@Initiative requires contractors to be accredited under Building Performance Institute (BPI) standards. Technicians must possess appropriate skills and are field-tested to obtain certification, further lending credibility to services offered.
The program strives to provide homeowners with consumer education, value and a whole-house approach. Contractors are trained to provide "one-stop" problem solving that identifies multiple improvements that, as a package, will increase the home's energy efficiency. While the program goal is saving energy, its market-based approach and message focus on addressing a variety of customer needs - comfort, energy savings, durability and health and safety. It also encourages the development of a skilled and available contmctor/provider infiashzlcture that has an economic self-interest in providing and promoting comprehensive, building science-based, re.trofit services.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option CHANGE A LIGHT-SAVE THE WORLD

1. Program Description

Changing the world starts with simple actions. When you replace a light bulb or fixture in your home with one that has earned the U.S. government's ENERGY STAR rating, you contribute to a cleaner environment while saving yourself energy, money and time buying and changing lights in your home. Lighting that has earned the ENERGY STARB rating prevents greenhouse gas emissions by meeting strict energy efficiency guidelines set by the US Environmental Protection Agency and US Department of Energy. ENERGY STAR0 encourages every American to change out the 5 fixtures they use most at home (or the light bulbs in them) to ENERGY STARB qualified lighting, to save themselves more than $60 every year in energy costs.

Every fall, ENERGY STAR@ partner retailers, manufacturers, utilities, and state organizations come together to make this change even easier. These partners are working to bring more energy-efficient lighting choices to store shelves than ever before. ENERGY STARQ qualified lighting uses two thirds less energy and lasts 6 to 10 times longer than traditional lighting. When you save energy, you not only save money on your utility bills, you also help to protect our environment.

KCP&L will contribute funds annually to the state agencies that are working with the EPA and Energy St.to promote this program in the KCP&L service temtory. KCP&L expects most of the funds to be used for point of purchase rebates for CFLs.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option COOL HOMES PROGRAM

1. PROGRAM DESCRIPTION

The Cool Homes Program will encourage residential customers to purchase and install energy-efficient central air conditioning and heat pumps by providing financial incentives to offset a portion of the equipment's higher initial cost. The program's long-range goal is to encourage contractors/distributors to use energy efficiency as a marketing tool, thereby stocking and selling more efficient units and moving the entire CAC and heat pump market toward greater energy efficiency. Incentives will be set at approximately 50% of incremental cost. SEER 13.0 and higher efficiency equipment will be rebated in 2005. Since federal standards are set to be increased from 10 SEER to 13 SEER in 2006, KCP&L will modifj. the 2006 incentives to only rebate SEER levels at 15.0 and above.

One important feature of the program that will begin immediately is to offer training in Manual J calculations and System Charging and Airflow for HVAC contractors. Manual J is the industry standard residential load calculation method. The training offers step-by-step examples of properly sizing equipment and also addresses principles of heat transfer. The training teaches WAC contractors to accurately perform and document cooling load calculationsand reduces over-sizing. The System Charging and Airflow course addresses airflow and charging procedures and standards and includes hands-on training in the use of testing equipment. Once enough contractors have undergone this training, KCP&L may mandate that these calculations take place in order to qualify for the incentive.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option ENERGY STAR@ HOMES -NEW CONSTRUCTION

1. PROGRAM DESCRIPTION

This program will require that new homes be constructed to a standard at least 30 percent more energy efficient than the 1993 national Model Energy Code. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air, conditioning systems, tight duct systems, and upgraded water-heating equipment.
Homes are qualified as an ENERGY STAR@with use of the Builder Option Packages (BOP). BOPs represent a set of construction specifications for a specific climate zone. BOPs specie performance levels for the thermal envelope, insulation, windows, orientation, HVAC system and water heating efficiency for a specific climate zone that meet the standard. The ENERGY STAR@ Homes program will offer technical services and financial incentives to builders while marketing the homes' benefits to buyers. Scaled incentives will be provided to homes that are qualified as ENERGY STAR@.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option ONLINE ENERGY INFORMATIONAND ANALYSIS PROGRAM USING NEXUS@COMMERCIAL SUITE

1. PROGRAM DESCRIPTION

The online energy information and analysis program allows all business and non-profit customers with computers to access their billing information and compare their usage on a daily, weekly, monthly or annual basis, analyze what end uses make up what percent of their usage, and access ways to save energy by end use through a searchable resource center. Targeted case studies provide ideas relevant to the customer's industry. This tool also allows the user to analyze why their bill may have changed fiom one month to another. A business comparison also displays usage benchmarking data versus similar types of businesses.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option C&I ENERGY AUDIT

1. PROGRAM DESCRIPTION

KCP&L will offer rebates to customers to cover 50% of the cost of an energy audit. In order to receive the rebate, the customer must implement at least one of the audit recommendations that qualify for a KCPkL C&I custom rebate. The energy audit rebate will be set at 50% of the audit cost up to $300 for customers with facilities less than 25,000 square feet and up to $500 for customers with facilities over 25,000 square feet. Energy audits must be performed by certified commercial energy auditors. Customers may choose their own auditor or KCP&L can recommend one. Customers with multiple buildings will be eligible for multiple audit rebates.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option C&I CUSTOM REBATE - RETROFIT

1. PROGRAM DESCRIPTION

The C&I Custom Rebate Retrofit program will provide rebates to C&I customers that install, replace or retrofit qualifying electric savings measures including HVAC systems, motors, lighting, pumps, etc. All custom rebates will be individually determined and analyzed to ensure that they pass the Societal Benefit Cost Test. Any measure that is pre-qualified (evaluated prior to being installed) must produce a Societal Benefit Cost test result of 1.0 or higher. Custom rebates are calculated as the lesser of the following: A buydown to a two year payback 50% of the incremental cost. One customer may submit multiple rebate applications for different measures. Each individual measure will be evaluated on its own merits. Similar measures that are proposed in different facilities or buildings will be evaluated separately. However, no customer, including those with multiple facilities or buildings, may receive more then $40,000 in incentives for any program year. As noted in the C&I Energy Audit program description, that program is designed to encourage customers to implement audit recommendations that would qualify for rebates under the CLI Custom Rebate Program.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option C&I CUSTOM REBATE – NEW CONSTRUCTION

1. PROGRAM DESCRIPTION

The C&I Custom Rebate New
Construction will provide rebates to C&I customers that install qualifying electric savings measures including HVAC systems, motors, lighting, pumps, etc. All custom rebates will be individually determined and analyzed to ensure that they pass the Societal BenefiKost Test. Any measure that is pre-qualified (evaluated prior to being installed) must produce a Societal BenefWCost test result of 1.0 or higher. Custom rebates are calculated as the lesser of the following: A buydown to a two year payback 50% of the incremental cost One customer may submit multiple rebate applications for different measures. Each individual measure will be evaluated on its own merits. Similar measures that are proposed in different facilities or buildings will be evaluated separately. However, no customer, including those with multiple facilities or buildings, may receive more then $40,000 in incentives for any program year. Another component of this program is an online new construction guide that will provide information to commercial builders and developers on energy efficiency in new construction. It first allows the builder or developer to identify the type of new construction building that is being planned, i.e. office building, community center, fire station. It then lists a variety of environmental and energy efficiency options and guides the builder or developer in prioritizing investments for the best results. A sample of this software is available for viewing at http://seattle.bnirn.com/. KCP&L proposes to build a similar site for the Kansas City metropolitan area but enhance it with features that tie into our rates and will allow developers and builders to plan buildings that can maximize our rates.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option BUILDING OPERATOR CERTIFICATION PROGRAM

1. PROGRAM DESCRIPTION

The Building Operator Certification (BOC) Program is a market transformation effort to train facility operators in efficient building operations and management (O&M), establish recognition of and value for certified operators, support the adoption of resource-efficient O&M as the standard in building operations, and create a self-sustaining entity for administering and marketing the training. This program requires a lot of effort and manpower. KCP&L cannot accomplish the program objectives alone. In year one of this program, KCP&L will work with the Missouri Department of Natural Resources to build a partnership with other Missouri stakeholders (sponsors). Once this has been accomplished, the program will begin to offer customers the Building Operator Training and Certification (BOC) program. The program will use a portion of its sponsor's hds(including the hds provided by KCP&L) to license the BOC curriculum from the Northwest Energy Efficiency Council (NEEC), its developer. Building operators that attend the training course will be expected to pay the cost of the course, less a $100 rebate that will be issued upon successful completion of all course requirements. The program is expected to attract customers with large facilities (over 250,000 sq. ft.) that employ full time building operators.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option AIR CONDITIONING CYCLING

1. PROGRAM DESCRIPTION

The Air Conditioning Cycling (ACC) is a program by which KCP&L can reduce residential and small commercial air conditioning load during peak summer days. The company achieves this load reduction by sending a paging signal to a control device attached to ihe customer's air conditioner. The control device then tums the air conditioner off and on over a period of time depending on the control and load reduction strategy establish by the company.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

Policy Option THE ALLIANCE, AN ENERGY PARTNERSHIP PROGRAM

1. PROGRAM DESCRIPTION

The Alliance, an energy partnership program, is a curtailment and distributed generation program designed to be a partnership with commercial and industrial customers. It is comprised of three coordinated programs. These are MPower, Distributed Generation and Commercial Lighting Curtailment. The program provides incentives to customers to reduce their load or add customer generation to the grid to offset the higher costs KCPL would incur without the reduced load or added customer generation.

MPower is a contracted load curtailment program for large commercial and industrial customers that provide a capacity and energy payment to participating customers to curtail their usage during summer months when high electric demand occurs. Customers are eligible for participation in the program by providing a minimum load reduction of 200 kW during KCP&L7s high usagehigh cost periods. The Missouri Public Service Commission and the Kansas Commerce Commission have approved the program tariff, currently known as Peak Load Curtailment Credit (PLCC). A new tariff will be filed as this two-part incentive program becomes finalized. The customer contract could extend over several years.

Distributed Generation is a program in which KCP&L contracts with a customer that has on-site generation to use their generator when needed. This program captures additional value from the customer's generator and provides support to the utility grid. The customer contract is expected to be over several years.

Commercial Lighting Curtailment is a program in which KCP&L contracts with commercial customers to reduce their lighting load when requested. This is accomplished by permanently installing control devices that either reduce the voltage to the lights or turn off perimeter lighting in office buildings. In either case new equipment will be installed to achieve this load reduction. The load curtailment contract will extend over several years.

2. Existing Policies
3. Policy/Program Option
    a. Description and Rationale
    b. Pros/Cons of proposal
    c. Recommended Action
4. Implementation
    a. responsible parties
    b. Legislative action
    c. budget requirements
    d. Implementation timeline

WGA Policy Options

Electric Utility Demand-Side Management (DSM) Programs

1. Encourage or require that utilities integrate energy efficiency options into resource planning and procurement decisions and pursue energy efficiency whenever it is the least cost resource option. At a minimum, electricity distribution companies in western states should dedicate at least 2% of revenues for ratepayer-funded energy efficiency programs, as long as doing so is cost effective.

2. Establish minimum energy savings requirements or targets. In particular, we recommend setting a goal of saving 3-5% of projected electricity sales in 2010 through DSM programs. By 2020, we recommend setting a goal of 10-15% savings from DSM programs, as long as doing so is cost effective.

3. Decouple electricity sales and revenues so that reduced electricity sales do not adversely affect utility revenues, in combination with the creation of performance incentives that reward utilities for implementing effective DSM programs.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline

Gas Utility Demand-Side Management (DSM) Programs

1. Encourage or require gas utilities to integrate energy efficiency resources into their resource planning and procurement decisions and pursue energy efficiency whenever it is the lowest cost option.

2. Establish ratepayer-funded natural gas energy efficiency programs.

3. Invest at least 1.5-2% of gas utility revenues in energy efficiency programs and strive to save the equivalent of 0.5-1.0% of gas consumption per year, as long as doing so is cost effective.

4. Decouple gas utility sales and revenues and create performance incentives that reward utilities for implementing effective DSM programs.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline

Building Energy Codes

1. For states with outdated (pre-2003) energy codes, adopt the 2004 International Energy Conservation Code. Also, consider adopting innovative features of California's latest Title 24 building energy codes, such as lighting efficiency requirements in new homes.

2. Update building energy codes regularly. A three-year cycle could be timed to coincide with release of the national model codes.

3. In home rule states, either establish a statewide mandatory code or strongly encourage local jurisdictions to adopt and maintain state-of-the-art codes.

4. Implement training and technical assistance for builders, designers, and code officials.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline

Appliance Efficiency Standards

1. Other western states should replicate efficiency standards first adopted by California, where cost effective.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline

Public Sector Initiatives

1. Establish substantial energy savings goals or requirements for state and municipal agencies, and track progress towards meeting them. We suggest at least a 2% annual reduction in energy use per square foot of floor area.

2. Provide financial and technical assistance for implementation of energy savings projects in existing buildings and facilities.

3. Use energy service companies (ESCOs) and performance contracting to implement efficiency projects without public sector capital investment.

4. Construct new buildings that are exemplary and surpass minimum energy code requirements by a wide margin.

5. Purchase only ENERGY STAR-labeled equipment in categories where such products are designated.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline

Financial Incentives

1. Consider providing income or property tax incentives to help stimulate greater adoption of energy efficiency measures, and consider coordinating qualification levels with the newly adopted federal energy efficiency tax credits.

2. For states with growing severance tax revenues on fossil fuels production, consider using a portion of these revenues to offset the revenue loss from tax incentives on energy efficiency measures.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline

Pricing Policies

1. Adopt inverted block rates (also known as tiered rates) for electricity consumed by residential customers.

2. Consider adopting inverted block rates for natural gas.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline

Education and Training

1. Partner with the U.S. EPA and DOE in promoting ENERGY STAR products, homes, commercial buildings, and industries.

2. Implement programs to train builders and contractors on proper heating and air conditioning sizing and installation.

3. Train commercial building energy managers, for example by making use of the building operator training and certification program developed in the Pacific Northwest.

4. Train industrial energy and facility managers in techniques for improving the efficiency of their steam, process heat, pumping, compressed air, motors, and other systems, partnering with the U.S. DOE in doing so.

5. Educate consumers about innovative energy efficiency measures such as modern evaporative cooling systems, reflective roofing materials, sealing thermal distribution systems, and use of day lighting.

6. Undertake K-12 school- and college-based energy education programs.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline

Technology R&D and Transfer

1. Support energy efficiency R&D and technology transfer efforts through either intrastate programs or working collaboratively among states.

2. Initiate, continue, and where appropriate expand programs promoting best practices in industrial energy management.

3. Encourage companies to set goals for energy efficiency improvement and energy savings, and track their progress towards the goals.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline

Regional-Level Initiatives

1. Create additional regional market transformation organizations modeled on the successful Northwest Energy Efficiency Alliance.

2. Form a regional building energy code collaborative to support code development, adoption, and implementation.

3. Advocate, as a region, for stronger federal appliance efficiency standards where this is technically feasible and economically justified.

4. Create or utilize a regional working group to quantify the air emissions benefits of energy efficiency programs and foster inclusion of energy efficiency initiatives in state and regional air quality improvement plans.

5. Ensure that the potential for and effects of energy efficiency efforts are incorporated in regional transmission planning.

6. Encourage Native American tribes to work together in hiring and training energy managers and contractors.

7. Reduce barriers to performance contracting and implement other strategies for increasing energy efficiency in commercial buildings.

Existing Policies
Policy/Program Option
- a. Description and Rationale
- b. Pros/Cons of proposal
- c. Recommended Action

Implementation
- a. responsible parties
- b. Legislative action
- c. budget requirements
- d. Implementation timeline